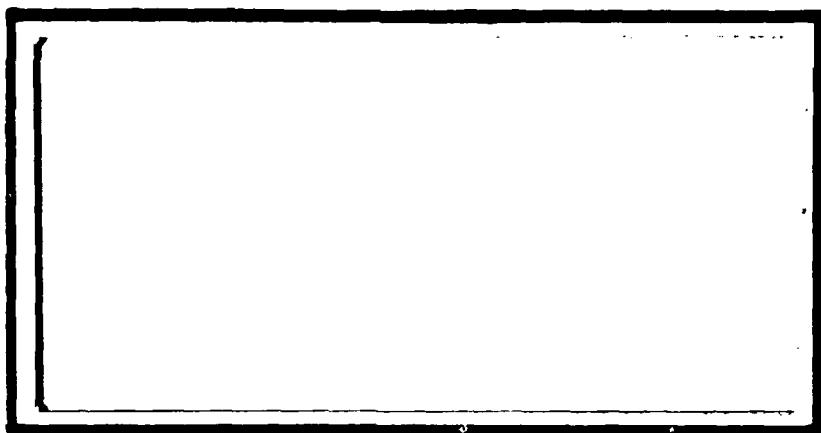


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A COMPUTER-BASED DECISION SUPPORT SYSTEM FOR
TAILORING LOGISTIC SUPPORT ANALYSIS (LSA)
CONTRACT REQUIREMENTS

THESIS

Paul D. Dunbar
Captain, USAF

AFIT/GLM/LSY/88S-17



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AFIT/GLM/LSY/88S-17

A COMPUTER-BASED DECISION SUPPORT SYSTEM FOR
TAILORING LOGISTIC SUPPORT ANALYSIS (LSA)
CONTRACT REQUIREMENTS

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Paul A. Dunbar, B.A.

Captain, USAF

September 1988

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Abstract

This thesis involved the development of a microcomputer program to help tailor Logistic Support Analysis (LSA), Mil-Std-1388-1A, requirements for contractual efforts. It is referred to as the LSA Decision Support System (DSS) Program. This program is intended to aid working level logisticians in developing good "first-cut" LSA requirements.

There are four main features in the program: (1) Mil-Std-1388-1A task and subtask descriptions with added notes from LSA experts, (2) a replication of the applicability matrix in Mil-Std-1388-1A, (3) a unique tailoring portion with notes from LSA experts, and (4) the AFALC LSA Lessons Learned as of July 1988. The programming language used is dBASE III PLUS; it is required to run the LSA DSS Program. The program was structured to be easily updated and expanded.

by [initials] [signature]

**A Computer-Based Decision Support System (DSS) for
Tailoring Logistic Support Analysis (LSA) Contract Requirements**

I. Introduction

General Issue

Logistic support analysis (LSA) is an iterative process that uses analytical tools throughout the design process (from the conceptual phase of design through testing of the final design) to ensure that supportability of a system or piece of equipment is designed into the system/equipment. Mil-Std-1388-1A outlines the requirements of this analysis in a series of tasks that are tailored and contracted as deemed appropriate for programs based on many considerations. Analysis that has been done, whether design can be influenced and to what degree, funding constraints, and schedule constraints are examples of important considerations in tailoring Mil-Std-1388-1A requirements.

"LSA is applied to all Air Force-managed acquisition and Class IV and V modification programs. (1:2) Further, the Department of Defense under its acquisition streamlining initiatives requires "...tailoring contract requirements to unique circumstances of individual acquisition programs; and (d) limiting the contractual applicability of referenced documents to only those that are essential." (2:4) Mil-Std-1388-1A tasks are structured to be tailored to meet the unique circumstances of acquisition efforts.

It has been the logisticians responsibility to tailor Mil-Std-1388-

1A tasks for contracts; some logisticians having had some experience in managing LSA efforts, and some having no experience. For the inexperienced logisticians, considerable time is required to research and understand LSA to appropriately tailor Mil-Std-1388-1A tasks and subtasks for contracts. The effort to tailor those tasks could be done more efficiently and effectively by inexperienced and experienced logisticians if a computer-based decision support system (DSS) were developed that provided users an understanding of LSA tasks, their applicability to different acquisition efforts, and lessons learned in applying LSA.

Capt Robert Pierce saw the need to simplify the process of tailoring Mil-Std-1388-1A tasks and subtasks and developed a worksheet to help tailor those tasks. This research is a follow-on effort to Capt Pierce's work. (3)

Decision Support Systems

Because of the growing work being done with DSS's and expert systems, it is important to make the distinction between the two since this thesis is not intended to develop an expert system. Decision support systems are defined as tools to help the manager, not replace the manager. One author defines the use of DSS's as follows:

1. The impact is on decisions in which there is sufficient structure for computer and analytic aids to be of value but where managers' judgement is essential.
2. The payoff is in extending the range and capability of managers' decision processes to help them improve their effectiveness.
3. The relevance for managers is the creation of a supportive tool, under their own control, which does not attempt to automate the decision

process, predefine objectives, or impose solutions. (4:2)

An expert system is designed to simulate the behavior of human experts in problem solving situations. "The computer takes the expert advice of humans, coded as a series of rules, and applies it to a specially structured knowledge base containing information about...a situation." (5:6)

Gathering the knowledge necessary to develop an expert system that could be used to tailor LSA requirements is beyond the possible scope of this thesis. The programmer believes, however, that a decision support system such as the one developed from this research will be an aid to logisticians. If the program becomes widely used, it will serve as a means to continue to capture lessons learned in applying Mil-Std-1388-1A requirements to the point that a reasonable expert system could be developed.

Specific Problem

Tailoring LSA requirements is a difficult task, especially for someone inexperienced in LSA. There are limited aids available to help understand the applicability of LSA tasks. This problem will be addressed in this research effort through the development of an LSA DSS computer program that will help tailor LSA requirements for contractual application.

Research Questions

To develop a microcomputer program DSS to tailor LSA requirements

for contracts the following questions will be answered:

1. What guidance currently exists to help tailor Mil-Std-1388-1A tasks?
2. What other tailoring considerations should be taken into account? This question involves capturing undocumented lessons learned from LSA experts in tailoring LSA requirements.
3. What programming language should be used and how should the program be structured?

Once the above questions have been answered and synthesized into a computer program, the question of the utility of the program in a system program office (SPO) environment must be answered.

Scope of the Research

This research is limited to investigating the initial tailoring of LSA tasks for contracting. It will not discuss the details of refining and negotiating LSA tasks, but will provide logisticians an aid for developing a good "first-cut" of tailored Mil-Std-1388-1A requirements.

The resultant computer program from this thesis effort is not intended to completely capture all information that eventually needs to be included in a decision support system to tailor all LSA requirements for an acquisition effort. It will form the basis for further expansion and refinement as more lessons in the application of LSA are gathered, as other program features are appended to the computer program, and as Air Force and Department of Defense policy decisions change with regard to LSA.

Validation of the completed LSA DSS program is beyond the scope of

this research. The programmer believes that validation should be done over the course of 2 to 3 years on several acquisition programs. This validation would help determine if the program actually helps logisticians select the right tasks and if there is sufficient information in the program to determine the applicability of tasks and subtasks for a variety of contract efforts.

Prior to official validation of the program, the researcher believes review of its contents by Air Force Acquisition Logistics Center (AFALC) LSA experts should be a sufficient to justify making the program generally available to logisticians. Feedback on the usefulness of the completed computer program will be solicited from LSA experts in this research effort.

II. LITERATURE REVIEW

Background

In March 1986 a tiger team was formed by the Air Force Deputy Chief of Staff for Logistics and Engineering (Lt. Gen. Leo Marquez) with the expressed purpose of studying the LSA/LSAR process in the Air Force and identify problems. An oversight committee for the tiger team felt a more in-depth study was necessary that involved participants from Air Staff, Air Force Systems Command (AFSC), AFSC Product Divisions, Air Force Logistics Command (AFLC), Air Force Acquisition Logistics Center (AFALC), Air Logistics Center (ALC), operating commands, and Air Training Command (ATC). (6:ii)

In August 1986, Lt. Gen. Marquez directed that an in-depth study be conducted by an LSA Acquisition Review Group. (6:iii) The review group visited 49 organizations and discussed 94 programs. (7:60-62) Organizations interviewed included Air Force product divisions, ALC's, ATC, AFLC, using commands, and defense contractors. The results of the study were documented in a March 1987 final report. (6,7)

The final report presented the six major conclusions drawn from the study.

First, Logistics Support Analysis should be included in requirements determination. Second, to do that, The Air Force must expand the scope of supportability analysis and get more using command involvement in the process. Third, for LSA to have an impact upon system design, it should be made the responsibility of the engineering community. Fourth, Logistics Support Analysis should be continued throughout a weapon system's entire life. Fifth, the application of LSA and the LSA Record to acquisition of mission critical computer resource (MCCR) software and information systems is needed to

ensure that system supportability is considered. And finally, to improve Air Force capability to effectively employ Logistics Support Analysis and get the most benefit from the LSA Record, improvement in education and training of Air Force personnel and the tools used in analysis and data manipulation are necessary. (6:vii)

Twenty-three specific tasks were developed by the LSA Tiger Team and documented in an LSA Roadmap. "The LSA Roadmap is merely a plan of action. It outlines the steps the logistics and engineering communities must take to fully implement LSA in the Air Force." (7:8) The roadmap is divided into four categories: technical management, coordination/communication management, policy and procedures, and training. Under each category are specific subtasks that must be accomplished to resolve problems discovered by in the study. Of these areas, training is the one this researcher will pursue. More specifically, one of the three subtasks under training: the development of LSA application guidance.

(7:18-28)

Task Number 3.4.2 in the training area recognizes that there is limited "self-help" documentation that can be used by individuals responsible for managing and implementing LSA. The tasking was given to AFALC/ERL who responded in part through the publication of the Air Force Logistic Support Analysis Primer, a general guide to the LSA process. (8) It does not provide detailed guidance needed at the working level though.

The training tasks in the roadmap identified the need for formal Air Force training in LSA. AFALC has established a training course. The need for Air Force LSA training courses recommended in the roadmap were presaged in thesis work done by Capt Paul Woodland, Capt Gary Davis, and Capt Roger Edwards in 1984 who identified the need for more LSA training for logisticians. (9:53, 10:49)

Currently Available Tailoring Aids

Since this research effort is principally concerned with developing an aid to tailor application of LSA tasks for contracts, it is important to look at guidance that currently exists in this area. Key existing information found that logisticians could use were (1) Mil-Std-1388-1A, (2) the Air Force Logistic Support Analysis (LSA) Primer, (3) the AFALC Guide for LSA and LSAR, (4) thesis work done by Capt Robert Pierce and tailoring worksheets he developed, (5) the Computer Generated Acquisition Documents (CGADS) computer program, and (6) AFALC's LSA Lessons Learned Bulletin. Two development efforts were found to be ongoing to create expert systems that would help system program offices (SPOs) tailor contract requirements, including Mil-Std-1388-1A requirements: (1) Logistics Planning and Requirements Simplification System (LOGPARS), and (2) the Computer Aided Tailoring Software Program (CATSP).

Mil-Std-1388-1A is the principal document, or tool, currently used by logisticians to tailor LSA tasks and subtasks for contracting. It provides an explanation of the purpose of the different LSA tasks that can be applied, and explains in general and in some detail how to tailor the LSA tasks for contracting. (11)

The goal of Mil-Std-1388-1A is as follows:

...a single, uniform approach by the Military Services for conducting those activities necessary to (a) cause supportability requirements to be an integral part of system requirements and design, (b) define support requirements that are optimally related to the design and to each other, (c) define the required support during the operational phase, and (d) prepare attendant data products. (11:iii)

The military standard is designed for tailored application. Its

requirements are divided into five areas: (1) program planning, (2) mission and support systems definition, (3) preparation and evaluation of alternatives, (4) determination of logistic support resource requirements, and (5) supportability assessment. These five areas are further divided into tasks that are further divided into subtasks. There are a total of 77 subtasks that can be levied on a contractor through Mil-Std-1388-1A. (11:9-51)

Appendix A of the military standard provides general guidance for logistic support analysis efforts and detailed guidance for applying tasks and subtasks. (11:59-103) This appendix gives a more detailed description of the purpose of subtasks than the descriptions given in the tasks description section of the military standard. It includes a matrix that relates the different subtasks to the different phases of the acquisition process and whether they are generally, selectively, or not applicable to a given phase, or if the task is generally applicable to design changes only. The matrix also identifies some of the data item descriptions that are deliverable as a result of performing certain LSA tasks. (11:98-103)

The Army LSA Primer, AMC Pamphlet 700-22, has been tailored to the Air Force's needs in the Air Force LSA Primer, AFLC Pamphlet 800-17.

(8,12) The Air Force primer provides a broad description of the application of LSA. It explains the purpose of LSA, overviews each of the Mil-Std-1388-1A tasks, discusses the LSA Record (LSAR), and describes each of the data records from Mil-Std-1388-2A. The task descriptions cover five points: (1) the purpose of the task; (2) what the task is required for; (3) when the task is required; (4) applicable references, such as military standards, regulations, and pamphlets; and (5) a list of

the subtasks under each task. (12)

The AFALC Guide for LSA and LSAR provides a more comprehensive view of the LSA process by describing the purpose of LSA, providing more detailed definitions of tasks within Mil-Std-1388-1A, showing the interface of LSA with integrated logistics support (ILS) elements, explaining the application of LSA to the different acquisition phases, and showing example contractual verbiage for LSA and LSAR requirements.

(13) Subtask descriptions are not included, nor are explanations of the applicability of subtasks to the different acquisition phases. This guide was in existence when the Air Force LSA study was performed and the subtask was given to AFALC to provide more LSA guidance to working level logisticians.

Capt Robert Pierce's thesis work in 1985 investigated tailoring Mil-Std-1388-1A tasks. The purpose of his thesis was to develop "...simple, useable guidance for tailoring the task of Logistics Support analysis (LSA)." (3:vi) This thesis is patterned after the purpose and methodology of Capt Pierce's work.

The decision support system he developed was a set of worksheets containing 94 questions based on a U.S. Army LSA application chart.

(3:6,13) As the user of his decision support system answered the series of questions in the worksheets, LSA subtasks not applicable to an acquisition effort were eliminated from the list of total tasks in Mil-Std-1388-1A. Decision rules were included in the worksheet that eliminated tasks as applicable or not applicable based on the acquisition phase the program was about to enter. (3:46-65)

Capt Pierce formed an expert panel of three individuals from AFALC

to help in his research. One of the responsibilities of the expert panel was to review the logic in his worksheets and help refine the decision rules in his DSS. (3:20)

A group of eight integrated logistics support (ILS) managers and the expert panel helped test the validity and utility of the worksheets. The expert panel used the decision support system to tailor the tasks for a trial case acquisition effort. Their tailoring was coordinated among the three individuals. The result of the expert panel's tailoring was the standard against which the tailoring done by the eight ILS managers, working individually, would be compared. (3:22)

Because the groups were small, and because purposive judgement was used in selecting all individuals used in the test, Capt Pierce did a non-statistical comparison of the two groups' tailoring. The result showed differences in the resultant list of tailored LSA tasks. (3:22)

Capt Pierce's research indicated that inexperienced participants in working logistics support analysis tended to apply LSA tasks they did not understand. (3:34-35) His research supported the need for more hands-on LSA tailoring training. (3:30)

The researcher does not plan to formally test this DSS as Capt Pierce did his. The researcher hopes to minimize the kind of variation Capt Pierce found in testing his decision support system by incorporating descriptive information in the program and lessons learned in applying LSA tasks. The LSA DSS tailoring program will in effect be a training tool for inexperienced logisticians. If the program is kept updated by AFALC, it will also be a method to keep experienced logisticians informed about proper application of LSA requirements for contractual efforts. This goes well beyond the work of Capt Pierce.

Of the eight ILS participants in Capt Pierce's work, four said the worksheet he developed made tailoring easier than using the military standard, three said it was the same, and one said it was more difficult. By developing a desktop computer decision support system, the researcher hopes to make a user friendly tailoring tool that makes tailoring easier, quicker to do, and helps ensure the right tasks are selected for contracting.

Capt Pierce's work has not resulted in a generally available tool for logisticians. The Computer Generated Acquisition Documents System (CGADS) is a generally available tool for system program offices (SPO's) for developing draft contract requirements including tailoring Mil-Std-1388-1A tasks. CGADS is a program maintained at the Directorate of Executive Information System, Electronics Systems Division (ESD), Hanscom AFB, MA. (15)

CGADS produces documents in the proper format for contracts and provides tailored contract requirements that can be readily transferred to a word processor for further refinement. (15:2-3) CGADS is resident on an ESD VAX computer that can be accessed through the Defense Data Network (DDN) or through direct dialing to the ESD VAX computer.

The programmer had the opportunity to use CGADS to see how LSA tasks and subtasks were selected. He found the tailoring to be somewhat generalized. The CGADS output from tailoring LSA tasks includes a note that complete LSA task tailoring is still required after CGADS has been used. Appendix A shows the questions posed by CGADS for tailoring LSA requirements for the different acquisition phases. Though CGADS tailors statement of work (SOW) and contract data requirements list (CDRL) requirements for deployment phase programs, no question are posed for LSA

requirements.

CGADS is a valuable tool for generating contracting documents. It provides notes to the user to help tailor tasks apart from the tailoring done by the computer program. After a trial use of the program, the researcher believes that development of a decision support system to tailor LSA requirements would be valuable given the general nature of the tailoring done by CGADS.

Another aid that is currently available to help logisticians and SPO's is the memory file of AFALC lessons learned that applies to LSA. A lessons learned bulletin can be obtained from AFALC/LSL that contains all the current lessons that applies to LSA. The bulletin is divided into three sections: LSA Application, LSAR Data Management, and Logistics Considerations. (16)

The purpose of the AFALC memory bank is "...to provide feedback for improving our acquisition programs." (16:i) A total of 48 LSA lessons were included in the LSA Lessons Learned Bulletin as of July 1988 and have been incorporated into the decision support system developed from this thesis effort.

New Tools Being Developed

Development of expert systems to tailor logistics contract requirements is being pursued by the Army and Air Force. The Army is developing an expert system to plan and tailor all ILS requirement that will produce contractual documentation, ILS plans, LSA task requirements, schedules, cost projections, and more. It is titled Logistics Planning and Requirements Simplification System (LOGPARS). (17) The Air Force is

developing an expert system to tailor reliability, maintainability, and LSA requirements for acquisition efforts. It is titled Computer Aided Tailoring Software Program (CATSP). (18) The researcher will explain the purpose of each, the basis for tailoring LSA tasks and subtasks within the program, and when these expert systems are planned to be completed.

The LOGPARS program is intended to simplify logistics planning and requirements. The program will be an expert system that will "consolidate and disseminate ILS expertise." (19) When completed, LOGPARS will contain a knowledge base that includes "advisory statements, ILS experience, policy, lessons learned, model SOWs, questions, model ILSP, handbooks, and warranty clauses." (19) The program will tailor ILS requirements, including specific Mil-Std-1388-1A tasks and subtasks that are required for an acquisition effort, based on "if...then...decision logic, rules of thumb, heuristics, policy, cost estimating procedures, schedule constraints, and format." (19)

LOGPARS is a two phase project at the Army's Materiel and Readiness Support Activity (MRSA). Phase I will be completed in Sept 1988. At that time Mil-Std-1388-1A tailoring will be programmed for FSD phase programs. Phase II will be completed in Sept 1989 at which time LOGPARS will tailor LSA requirements for all acquisition phases of programs. (17)

LOGPARS is not being programmed for multi-service use. Changes to the program would likely be minimal, though, for it to be applicable to other services. The main programming language being used by MRSA to develop LOGPARS is PROLOG, a common programming language for artificial intelligence programs. LOGPARS will be programmed in a manner that will allow new expert knowledge to be added to the program without re-programming being necessary. That is to say, an LSA expert without

programming skills will be able to add information to the LOGPARS knowledge base. (17)

The logic used within LOGPARS to tailor LSA tasks is product or objective oriented. Based on the desired output product or objectives of the LSA effort for an acquisition program, LOGPARS will identify the necessary Mil-Std-1388-1A tasks and subtasks that must be accomplished.

(17)

The CATSP program is being developed at Rome Air Development Center (RADC). CATSP is intended to tailor reliability, maintainability, and logistic support analysis requirements for acquisition efforts. Initially, the applicability matrix from Mil-Std-1388-1A was planned to be used to tailor LSA tasks and subtasks, but RADC is now reviewing the LOGPARS program and will likely integrate the LSA tailoring from it into CATSP. (18)

CATSP is scheduled to complete a first draft of the program by July 1989. C-Programming language is the principal programming language being used. (18)

Conclusions drawn by the researcher from the background investigation is that a computer based decision support system would greatly supplement the existing guidance currently available for tailoring LSA requirements for acquisition programs. Furthermore, an LSA DSS would help expand the "self-help" guidance that AFALC has already provided to logisticians at the working level in satisfying the roadmap tasking to develop LSA application guidance.

III. METHODOLOGY

A five step approach was taken to answer the research questions and develop the computer program to tailor Mil-Std-1388-1A requirements for contracting. First, a literature review was conducted to determine if a decision support system (DSS) currently existed to tailor LSA requirements for an acquisition effort, and if not, to locate source data to develop a desktop computer DSS. The second step was the initial development of the DSS computer program. The third step was to identify LSA experts and draw undocumented lessons they have learned in applying LSA tasks and subtasks and identify decisions rules they use to tailor LSA tasks and subtasks. The fourth step was to update the computer program based on step three and to produce supporting documentation for the computer program. The final step was to get feedback from the LSA experts on the finished LSA DSS program to identify both the usefulness of the program and future enhancements that should be made. This chapter will explain how each step was pursued, and in describing step two, it will provide an overview of the structure of the computer program and reasoning for the structure.

Step 1: Literature Review

Chapter two of this thesis describes the source data available to Air Force logisticians for tailoring Mil-Std-1388-1A requirements for contracting. The following explanation of the first step in the methodology taken in this research will identify the source data that the

programmer used to develop a desktop computer DSS.

There were three key sources of information used to initially develop the DSS: (1) thesis work done by Capt Pierce, (2) Mil-Std-1388-1A, and (3) the AFALC LSA lessons learned databank. The CGADS program and the Acquisitions Management and Data Requirements Control List (AMSDL) were used to identify contract requirements that primarily implement tasks that overlap certain LSA requirements. (20)

Capt Pierce's LSA tailoring worksheet was the basis for structuring the series of questions used in the development of this DSS. Mil-Std-1388-1A was used to clarify some of the wording of Capt Pierce's questions and also as the key source of descriptive information that would be included in the DSS program to help users of the program understand the purpose and requirements of the different Mil-Std-1388-1A tasks and subtasks. Details of how the worksheet developed by Capt Pierce and Mil-Std-1388-1A were used in writing the program is discussed in the description of step two of this research methodology.

The AFALC lessons learned databank was reviewed to see if there were lessons that discussed the applicability of certain tasks under certain conditions. None were found in the database. Since the list of lessons learned within the AFALC LSA Lessons Learned Bulletin was relatively short when the program was developed, the programmer planned to include them in total in the program as a ready reference to logisticians. The programmer felt this would provide some help in planning LSA requirements for contracting, and act as a catalyst to encourage logisticians to submit lessons learned in applying LSA if this DSS becomes generally used within systems program offices (SPO's).

Step 2: Development of the Computer Program

Development of the computer program followed the literature review. Before deciding on the language that would be used for programming, the programmer listed features he thought the final DSS would embody, and characteristics important in the programming language used. The DSS would embody many conditional statements and decision rules, would be menu driven to make the program easy to use, include considerable descriptive information on LSA tasks and subtasks, would include all the AFALC LSA lessons learned, and must provide hard copy and computer file outputs of tailored tasks. Characteristics important in the programming language were relative ease in learning the language since the researcher had very limited programming experience prior to this effort, readability of the program for non-programmers who are experienced in LSA and may be responsible for updating the program or providing comments, easily expandable to accomodate enhancements to the program in the future, and general availability of the programming language. DBase III Plus programming language was the researcher's preference in that it met all of the above conditions.

The programmer made the assumption that dBASE III PLUS was generally available within SPO's. If the assumption is not valid, however, the researcher believed the program could be compiled using one of the commercially available dBASE III PLUS compilers. Compiling the program obviates the need for system program offices to have a copy of dBASE III PLUS to use the LSA DSS program.

There are several compilers available for dBASE III PLUS. Clipper is one and is a product of Nantucket. Ashton-Tate, the maker of dBASE

III PLUS, markets a compiler for it called dBRUN. Wordtech Systems' compiler is called dBIII Compiler. (21:268) A fourth compiler available is called dB Fast and is made by dB Fast Inc. (22)

There are many dBASE III PLUS programming books available for the novice and experienced programmer. Cited within the bibliography are those books the programmer found useful in learning the language and completing this thesis effort. (23,24,25)

The LSA DSS was developed around Capt Pierce's tailoring worksheet. In developing the DSS, the programmer avoided putting in any of the conditional logic based on the acquisition phase a program would enter. He preferred to discuss the decision rules LSA experts were applying in selecting LSA before adding them to the program. After the program was initially completed and working, the programmer planned to review it with the LSA experts and incorporate the decision rules they recommend be used. Some exceptions were taken by the programmer though.

Where it appeared that there was an inseparable relationship between subtasks, the LSA DSS program was written to automatically require one subtask from Mil-Std-1388-1A if the other was required. For example, if subtask 301.2.1 (Functional Requirements) is levied on the contractor, subtask 301.2.5 (Design Alternatives) and subtask 301.2.6 (Updates) were assumed to be required. In this case, the reasoning was that if the contractor is tasked to identify functional and document functional requirements as subtask 301.2.1 requires, then the government would logically want the contractor to identify design deficiencies uncovered during identification of functional requirements, as subtask 301.2.5 requires, and would want those functional requirements updated as design progresses, as subtask 301.2.6 requires. (11:32)

Though liberties were taken in making such assumptions while writing the initial programming, the researcher planned to have assumptions confirmed or refuted when the program was presented to LSA experts for review. Table 3-1 shows the subtasks assumed to be interrelated when the program was initially developed. Of the interrelationships shown, only subtasks within Task 202 were recommended by the LSA experts to be broken out in the program to be tailored separately for applicability after the program was reviewed.

Table 3-1. Interdependent Subtasks Within the LSA DSS Program.

<u>Subtask Number</u>	<u>Subtask Title</u>
201.2.1 and 201.2.4	Supportability Factors and Use Study Report and Updates
201.2.2 and 201.2.4	Quantitative Factors and Use Study Report and Updates
201.2.3 and 201.2.4	Field Visits and Use Study Report and Updates
202.2.1, 202.2.2, 202.2.3, and 202.2.4	Supportability Constraints, Supportability Characteristics, Recommended Approaches, and Risks
301.2.1, 301.2.5, and 301.2.6	Functional Requirements, Design Alternatives, and Updates
301.2.4, 301.2.4.3, 301.2.5, and 301.2.6	Operations and Maintenance Tasks, Operations and Support Tasks Not Identified by FMECA or RCM, Design Alternatives, and Updates
401.2.1 and 401.2.2	Task Analysis and Analysis Documentation

Though some subtask interrelationships were assumed, the portion of the initial program used to tailor Mil-Std-1388-1A tasks essentially synopsizes the task descriptions from the military standard in asking whether or not certain subtasks are applicable. The wording in Capt Pierce's worksheet was used in large part in initially developing wording of questions. (3:46-65)

Three other portions were planned for the program to supplement the tailoring portion of the program: (1) a portion that more fully describes the different LSA tasks and subtasks that could be levied on a contractor, (2) a section that showed the matrix from Mil-Std-1388-1A of the applicability of tasks and subtasks according to the acquisition phase the program would enter, and (3) the AFALC LSA lessons learned.

The portion of the program that describes the LSA tasks and subtasks reiterated much of the descriptive information from Mil-Std-1388-1A. (11:9-51) Where some descriptions seemed somewhat vague, additional information from Appendix A of the military standard which provides application guidance was used. (11:58-94) The researcher envisioned supplemental notes being added to this portion of the program after soliciting inputs from LSA experts to clarify the purpose, applicability, or tailoring of tasks and subtasks.

The purpose of the descriptive section of the program is to educate logisticians unfamiliar with the different LSA tasks and subtasks on the requirements of each task and subtask. This portion of the program was designed to include helpful notes from the experience of logisticians as well as to convey their lessons learned in applying LSA to contractual efforts. These lessons learned are the basis for this program helping logisticians more effectively tailor Mil-Std-1388-1A

requirements for their contracts.

This portion of the program was written to be easily updated. Each task and subtask description were written into separate dBASE III PLUS ".PRG" (program) files which are ASCII formatted. A .PRG file is one that includes programming statements that are executed by dBASE III PLUS. The researcher assumed putting descriptive information in ASCII files versus embedding them in the data base file used by the LSA DSS program would make maintaining the information in the program easier for individuals interested in updating the program.

The files that contain descriptive information use a naming sequence that coincides with the particular task or subtask number. For example, the description for Task 101 is stored in the program file T101.PRG, subtask 101.2.1 is stored in T1121.PRG, and subtask 303.2.10 is in T33210.PRG. Chapter four will discuss in more detail the exact documentation that makes up the program and interrelationship of the files within this portion of the program.

One can see the relative ease of reading the individual PRG files. Appendix B contains the descriptive program files for the LSA DSS program including the descriptive files.

Besides the task tailoring and descriptive portions, there is a portion that replicates the applicability matrix of LSA tasks and subtasks by acquisition phases from Mil-Std-1388-1A. (11:98-103) This matrix is intended to provide an aid to logisticians versus a crutch in selecting tasks for a particular acquisition effort. For the inexperienced logistian, it provides a general idea about the applicability of tasks and subtasks to the different acquisition phases. For all logisticians it provides a point of reference for helping to

tailor tasks and some notes regarding other contract requirements that LSA overlaps but does not provide primary guidance to the contractor. Individuals are warned in this portion of the program not to rely upon the matrix to tailor Mil-Std-1388-1A requirements because of the unique nature of many acquisition efforts.

A data base file was used to store the applicability matrix. The data base identifies tasks and subtasks that are in some manner applicable to a given acquisition phase. The database also contains notes on the applicability of tasks and subtasks to conceptual, demonstration/validation, full-scale development, and production phases. The deployment phase is not included in this program because Mil-Std-1388-1A does not currently address this phase.

The matrix includes references to other military standards that primarily implement contract requirements that provide information for certain LSA tasks and subtasks. Where the Mil-Std-1388-1A applicability matrix references other contract requirements that this military standard does not implement, the programmer references the military standard or contract requirement that does. This information was gleened from the CGADS program and the AMSDL. (20)

The last portion of the computer program contains the AFALC LSA lessons learned. (15) The purpose of including the lessons learned was to provide documented information that could help better tailor or plan LSA and logistics requirements for contract efforts. Including it ensures the lessons are readily available to logisticians instead of them having to locate the bulletin, assuming they know that the bulletin is even available for their use. A secondary intent in including this portion is to make logisticians more aware of AFALC lessons learned.

Seeing lessons in this program will hopefully encourage more involvement in submitting lessons learned to capture more relative to applying LSA under varying contracting situations.

Each lesson learned case study is contained in separate ASCII formatted files. The program was written to provide the user a menu of the lessons that can be reviewed. When one is selected for review, the dBASE III PLUS program uses the disk operating system (DOS) to display the files a page at a time on the screen.

Output products (i.e., printed reports and output files) are programmed to be available from two of the four portions of the LSA DSS program: the tailoring portion of the program and the matrix portion. The purpose of having an output report from the applicability matrix portion is to provide a reference aid while using the unique tailoring portion of the program. The output product from tailoring is intended to be used in writing the contract requirements for the acquisition effort.

Step 3: Input of LSA Experts

A small number of LSA experts was desired to make handling comments from the experts manageable. The support of three individuals who's primary responsibility was managing LSA programs or had considerable experience in LSA was desired. Capt Brett Andrews (AFIT/LSY), Mr John Yaniec (ASD/RWL), and Mr Ron Potter (ASD/ALT) were the LSA experts involved in this thesis effort. The reader should see Appendix C for biographical information on these individuals.

Minor comments were solicited from the experts prior to completing an initial working program as well as general comments on the perceived

utility of the program. After the first complete draft of the LSA DSS program was completed, a group meeting of all LSA experts was held to review the program in detail and develop changes to the program through concensus opinion. The primary goal at the group meeting was to validate some of the assumptions the author made while programming concerning interrelationships of subtasks, and most importantly, capture undocumented lessons learned and decision rules of the three experts to enhance the program.

The group meeting took place on 6 July 1988. Because of the limited availability of the LSA experts, the meeting ended within 4 hours. A follow-on meeting was not possible because of conflicting schedules of the LSA experts and their limited availability in the coming 2 months. A detailed review of subtasks from 101.2.1 through 203.2.1 was done. Seventeen of the 77 total Mil-Std-1388-1A subtasks were reviewed.

A copy of the LSA DSS program was given to each of the three LSA experts and to AFALC/ERL following the group meeting. Each of the experts and the AFALC/ERL focal point for this research effort reviewed the remainder of the program and provided comments during individual meetings with the researcher.

Comments from the experts were mainly aimed at identifying additional notes of consideration for logisticians in selecting LSA tasks and subtasks and helping logisticians understand the interrelationship of LSA with other contract requirements.

Step 4: Update the Program and Develop Supporting Documentation

All comments experts and AFALC/ERL provided the researcher were

discussed with the individuals, and changes they desired were made to the program. An additional change was made by the programmer to update the AFALC lessons learned files from the July 1988 AFALC LSA Lessons Learned Bulletin to reorganize the menu for selecting the lessons learned to mirror the organization of the AFALC bulletin. This change was made to make this portion of the program more familiar to individuals accustomed to the organization of the bulletin.

A users manual was developed after the program was updated. The manual developed by Cmdr Claire Smith and the data item description DI-M-30421, Users Manual (Information Systems), were used as guides to develop the LSA DSS Program Users Manual. (26:152-158, 27) The manual includes instructions for experienced and inexperienced users of personal computers for loading the programs onto a Zenith 248 computer and using it.

Step 5: Feedback

After comments were received from experts and the program updated, the programmer met with each expert to review the working program. A questionnaire was given to the experts after the final program was reviewed. That questionnaire is at Appendix D.

The questionnaire was intended to solicit feedback on the perceived usefulness of the program and recommendations for improvements to it. Because capturing more of the experience learned and being learned in applying LSA seems an important part of enhancing this program, experts were also asked how one could best capture that knowledge.

Minor comments that were made to the program by the LSA experts when

the questionnaire was give were incorporated into it. Major comments are included in the findings and recommendations section of this thesis as recommendations for future enhancements.

IV. DOCUMENTATION AND PROGRAM OPERATION

This chapter will discuss the database file used with the LSA DSS program, the program files used in each of the four portions of the LSA DSS program, and the users manual. The interrelationship of program files will be discussed as well as the operation of the program.

Types of Files Used

Prior to describing the documentation for the four program sections, an explanation of the four different types of dBASE III PLUS files used in the program will be given.

.DBF Files. Database (.dbf) files store data in records and fields, and rows and columns respectively. Each record is intended to contain a set of unique information.
(23:Sec II,1-4)

.DBT Files. Database memo files are auxiliary files to database (.dbf) files. They are used to store the contents of memo fields. (23:SecII,1-4)

.PRG Files. Command files contain sets of dBASE III PLUS instructions that have been stored as programs. They are ASCII files and may be created with...any word processing program that creates ASCII text files. (23:Sec II,1-5)

.FRM Files. Report form files contain the information needed by the REPORT command to prepare reports. (23:Sec II,1-6)

Data Base Files

The LSA DSS program uses a master data base file for the applicability matrix portion of the program and for uniquely tailoring LSA requirements. Table 4-1 shows the different fields within the data base, the type field of each, and the size of fields. TASKS1.DBF is

the name of the master database file. Each of the tasks and subtasks that can be contractually levied on a contractor are included in the data base as a separate record.

There are three types of fields used in the data base: character, logical, and memo fields. Character fields contain alphabetic characters, logical fields contain true (.T.) and false (.F.) logical symbols, and memo fields contain short text files that are stored in an adjunct file to the data base file labelled TASKS1.DBT.

Within TASKS1.DBF is the field TASK_NUM. It identifies the task and subtask numbers from Mil-Std-1388-1A. The field NAME contains an abbreviation of the task or subtask name. The name of tasks and subtasks were limited to 20 characters to fit the output report used in the program.

Table 4-1. TASKS1.DBF File Structure.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>WIDTH</u>
TASK_NUM	Character	9
NAME	Character	20
APPLICABLE	Logical	1
UNSURE	Character	6
CONCEPT	Logical	1
DEMVAL	Logical	1
FSD	Logical	1
PROD	Logical	1
CON_NOTE	Memo	-
DEM_NOTE	Memo	-
FSD_NOTE	Memo	-
PROD_NOTE	Memo	-

Some fields are used to sort tasks and subtasks to be displayed in output reports. These fields are the logical fields shown above. The field APPLICABLE is used in the portion of the program to uniquely tailor

task and subtask requirements. As questions are answered in this portion of the program, APPLICABLE is given a .T. symbol if a subtask is required, or remains .F. if not. This field is used to then sort out all applicable tasks and subtasks by selecting records with .T. and displaying them in the output report for this portion of the program.

CONCEPT, DEM_VAL, FSD, and PROD logical fields are used for the applicability matrix portion of the LSA DSS program. For each record in the data base, these fields are marked with .T. if the tasks or subtasks are in anyway applicable to the acquisition phases these fields represent. These fields are used to sort applicable tasks and subtasks and for inclusion in the output report for each of the different acquisition phases.

The field UNSURE is used with the unique tailoring portion of the LSA DSS program. It denotes those subtasks that one is uncertain are required for their contract effort from answering task and subtask tailoring questions.

The memo fields that are associated with the data base contain notes from the applicability matrix of Mil-Std-1388-1A. The contents are displayed in output reports used with the applicability matrix and unique tailoring portions of the program. Though the memo fields contain a small number of comments, they can be expanded in future updates with the limitation of the size of the field dictated by the word processor used to create it and storage capacity of one's floppy or hard disk. Up to 5000 characters can be stored in a memo field using the text processor within dBASE III PLUS. (23:Sec II,1-8)

The memo fields in the data base are CON_NOTE, DEMVAL_NOTE, FSD_NOTE, and PROD_NOTE. Appendix E shows the contents of memo fields in

the printouts from the applicability matrix portion of the program.

Additional information contained in the memo fields not included in the military standard is identification of military standards that primarily implement contract requirements required for performance of certain LSA tasks and subtasks.

Another data base that is used within the program is OUTPUT.DBF and its adjunct file OUTPUT.DBT. These data base files are cloned from the master data base file, TASKS1.DBF and TASKS1.DBT, when the unique tailoring portion of the program is used. OUTPUT.DBF is used to record answers and produce the output report from unique tailoring.

When the unique tailoring portion of the program is used, the user is prompted to overwrite the existing data base file OUTPUT.DBF with the contents of TASKS1.DBF. Thus, recorded answers from the last time this portion of the program was used will be erased each time it is used.

An option to avoid overwriting the data base OUTPUT.DBF will be addressed in the description of the program file OPT3.PRG in this chapter. There is a way to reuse the results from prior use of the program, though that was not an original intention in developing the program.

Report Form Files

Report form files are used to display, print, or save the results of uniquely tailoring task and subtask requirements and the contents of the applicability matrix. There are different report form files used for these two portions of the LSA DSS program, though all report form files used within the overall program have the same structure. The structure

of report form files is shown in Table 4-2.

The heading column in Table 4-2 indicates the heading label printed above each column in the output report. The column content below shows the field from the database that is displayed in the output report. The column width below indicates the spacing on the output report.

Table 4-2. Report Form Structure.

<u>Heading</u>	<u>Content</u>	<u>Width</u>
Task No.	TASK_NUM	10
Task	NAME	21
(no heading)	UNSURE	6
Comments	CON_NOTE, DEM_NOTE, FSD_NOTE, or PROD_NOTE	32 32 32 32

The titles used in each report form file indicates whether the output is from the unique tailoring portion of the LSA DSS program or the applicability matrix portion, and what acquisition phase the program will enter. The page width for output reports is set at 75 characters, the lines per page is set at 58, and single spacing is specified within the report form files. Appendix E shows the output reports from the applicability matrix. Appendix F shows a representative output from using the unique tailoring option.

Program Files

This section of Chapter four will explain each of the four portions of the LSA DSS program. The purpose, files used in each portion, and

operations of each will be discussed.

MAIN.PRG

Purpose. The purpose of the main program file, MAIN.PRG, is to initiate the LSA DSS program and present the means to access one of the four main portions of the overall program. This program file is also used to quit using the program.

This program file sets dBASE III PLUS functions that control the operating environment of the program. It sets screen displays and bells off that are normally displayed when dBASE III PLUS is used so that the only displays on the screen are those programmed into the LSA DSS program. It also sets the dBASE "confirm" mode on so that all responses by the user to program questions must be followed by striking <Return> to confirm that the desired answer was given.

Files. MAIN.PRG is the only file used to initiate the LSA DSS program. It is Appendix G to this document. Figure 4-1 shows the hierarchical relationship of this program file to the four program files that are accessed through MAIN.PRG. A DO CASE dBASE III PLUS construct is used to select one of the four program files from MAIN.PRG.

Operations. To execute this program file the user must first have the dBASE III PLUS program running and be at the dot prompt commands for dBASE. The users manual for the LSA DSS program explains how this is done if the user is unfamiliar with dBASE III PLUS.

The user must specify the location of MAIN.PRG on the harddisk drive. If files are stored as recommended in the users manual, the dBASE command SET PATH TO C:\DBASE\LSA would be typed at the dot prompt followed by the command DO MAIN to execute MAIN.PRG.

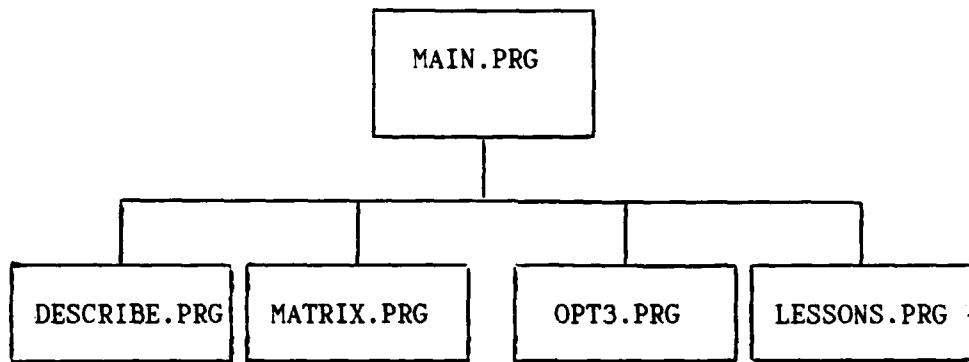


Figure 4-1. Sub-indenture Program Files to MAIN.PRG

After starting MAIN.PRG, the dBASE operating environment is setup through the SET TALK OFF, SET BELL OFF, and SET SCOREBOARD OFF commands included within MAIN.PRG. The confirm mode is set through the SET CONFIRM ON within MAIN.PRG.

The title and last revision date are displayed as well as a brief description of the contents of the program when this program file is executed. The menu shown in Figure 4-2 is displayed on the screen from MAIN.PRG to select the portion of the program the user wishes to use or to select the option to quit the LSA DSS program.

DESCRIBE.PRG

Purpose. The purpose of DESCRIBE.PRG is to act as the top level program file for accessing other program files that describe the individual tasks and subtasks within Mil-Std-1388-1A. The program files T100.PRG, T200.PRG, T300.PRG, T400.PRG, and T500.PRG are accessed through this program file. Each of these files access program files for each LSA

Which of the following routines would you like to use?

- (1) Description of LSA tasks/subtasks
- (2) Task/subtask applicability matrix by acquisition phase
- (3) Decision support system for unique tailoring of LSA tasks/subtasks
- (4) AFALC LSA Lessons Learned
- (5) Exit the program

What is your choice?

Figure 4-2. MAIN.PRG Menu Display.

task, which access program files for each LSA subtask that can be levied on a contractor.

The descriptive program files under DESCRIBE.PRG provide a description of LSA tasks and subtasks from section five and Appendix A of Mil-Std-1388-1A. (11) They also include lessons learned from LSA experts that were identified through this research effort.

Files. There are a total of 94 program files that are a subset to DESCRIBE.PRG. They are at Appendix B. The naming convention of the descriptive program files is based on the task area number, task number, and subtask number.

The descriptive program files are hierarchical, so the user of the program must go through the different levels of the program to read a particular subtask description and return to the program file DESCRIBE.PRG to return to MAIN.PRG. Figure 4-3 illustrates the

hierarchical structure of this portion of the LSA DSS program by showing the program route to subtasks under Task 302.

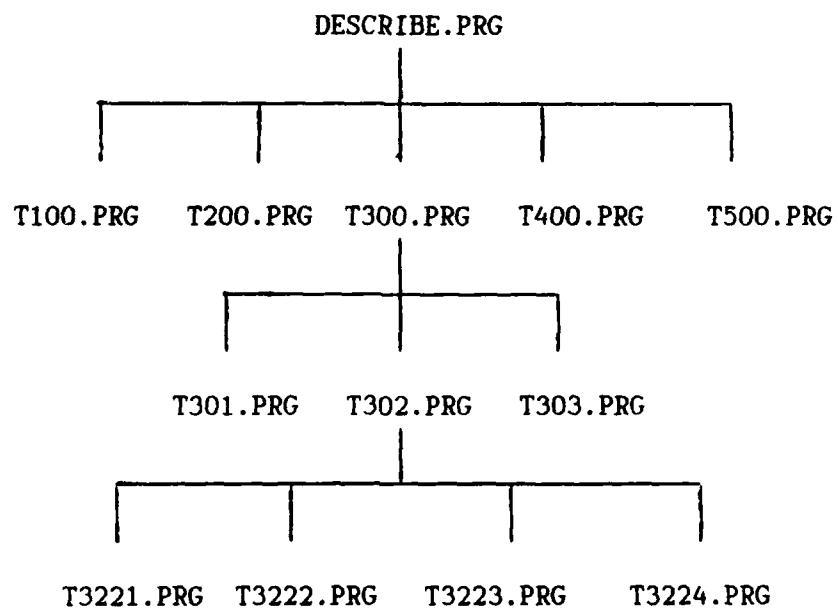


Figure 4-3. Hierachal Relationship of Descriptive Program Files.

The following program files contain lessons learned from LSA experts:

T1221.PRG
T103.PRG
T1324.PRG
T2123.PRG
T3124.PRG
T5121.PRG

Operations. DESCRIBE.PRG and the descriptive files the user wants to review are accessed through program menus. The MAIN.PRG menu showed the option for accessing descriptive files, i.e., for initiating DESCRIBE.PRG. Figures 4-4 through 4-6 show the screen displays the user would view to proceed from DESCRIBE.PRG to a subtask descriptive file

such as T3221.PRG.

The program files containing subtask descriptions simply display text to the screen a page at a time. There is no program option to print information displayed.

To return to the main menu, the user must return to the menu for each program file at each indenture level under DESCRIBE.PRG. This is done by simply returning to the previous menu from the menu the user is currently using.

Which of the following task areas would you like to review?

- (1) 100 Series - Program Planning and Control
- (2) 200 Series - Mission and Support Systems Definition
- (3) 300 Series - Preparation and Evaluation of Alternatives
- (4) 400 Series - Determination of Logistic Support Resource Requirements

- (5) 500 Series - Supportability Assessment
- (6) Return to the previous menu

What is your choice?

Figure 4-4. DESCRIBE.PRG Menu.

MATRIX.PRG

Purpose. The purpose of MATRIX.PRG is to replicate the applicability matrix of Mil-Std-1388-1A. Tasks and subtasks that are applicable in some manner to each of the four acquisition phases are identified in this matrix with comments. Additional information is added

300 Series Tasks - Preparation and Evaluation of Alternatives

Which of the following 300 Series tasks would you like to review?

- (1) Task 301 - Functional Requirements Identification
- (2) Task 302 - Support System Alternatives
- (3) Task 303 - Evaluations of Alternatives and Tradeoff Analysis
- (4) Return to the previous menu

What is your choice?

Figure 4-5. T300.PRG Menu.

The purpose of Task 302 (Support System Alternatives) is to establish viable support system alternatives for the new system/equipment for evaluation, tradeoff analysis, and determination of the best system for development.

Which of the following subtasks would you like to review?

- (1) 302.2.1 - Alternative support concepts
- (2) 302.2.2 - Support concepts updates
- (3) 302.2.3 - Alternative support plans
- (4) 302.2.4 - Support plan updates
- (5) 302.2.5 - Risks
- (6) Review all subtasks
- (7) Return to the previous menu

What is your choice?

Figure 4-6. T302.PRG Menu.

to that drawn from Mil-Std-1388-1A to identify documents that primarily implement contract requirements that provide input data to the LSA effort.

Files. MATRIX.PRG is the only program file used in this portion of the overall program. Based on the acquisition phase the user is interested, MATRIX.PRG selects one of four report form files: CON.FRM, DEMVAL.FRM, FSD.FRM, OR PROD.FRM. The report form files draw information from the master database, TASKS1.DBF, and its adjunct memo file, TASKS1.DBT. How that information is stored and sorted for inclusion in the output reports for this portion of the program is explained on page 30. Appendix H is MATRIX.PRG.

A temporary file is created in this portion of the program to display the output report to the screen a page at a time. The temporary file is called TEMP.TXT and is created when the user of the program asked to review output information on the screen. After it has been displayed, TEMP.TXT is erased.

Operations. This program file is accessed through the main program menu. Once selected, the user is asked to select an acquisition phase and then to select the form they would like the output report. The user can either review the applicable tasks and subtasks for the selected acquisition phase on the screen, have the information sent to the printer, or have it stored on a file called MATRIX.TXT Figures 4-7 and 4-8 show the menus displayed by this program file.

The output report will scroll across the screen for all three options. It will scroll a second time for the option to review the ouput on the screen pausing between pages. This was done in the program code

for MATRIX.PRG using a MS-DOS command to display a file a page at a time.

The user has the option to review the output report for a selected acquisition phase as many times as desired. To select another acquisition phase, the user must return to the main menu and re-enter the

What acquisition phase will the program enter?

Please answer:

- (1) Conceptual
- (2) Demonstration/Validation
- (3) Full-Scale Engineering Development
- (4) Production

What is your choice?

Figure 4-7. MATRIX.PRG Menu.

Would you like the results of this program sent to the screen, printer, or file MATRIX.TXT?

NOTE: Saving the results to the file MATRIX.TXT will overwrite anything previously saved from using this portion of the program. This screen will be repeated until you select option 4 to return to the main menu and conclude using this portion of the program. For options 1 thru 3, the output report will first scroll through the screen. It will be repeated for option 1 a page at a time.

Please answer:

- (1) Screen
- (2) Printer
- (3) File
- (4) Return to main menu

What is your choice?

Figure 4-8. MATRIX.PRG Menu.

applicability matrix portion of the overall program. Figure 4-9 illustrates this program flow.

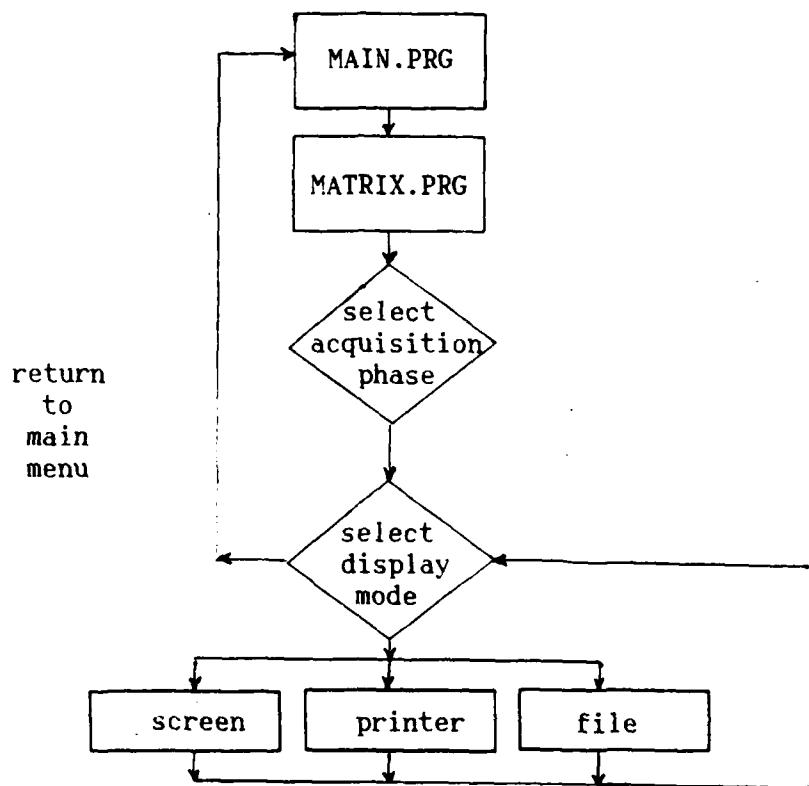


Figure 4-9. MATRIX.PRG Program Flow.

OPT3.PRG

Purpose. The program file OPT3.PRG is used to uniquely tailor Mil-Std-1388-1A task and subtask requirements for contracting. To aid in task tailoring, lessons learned and comments from LSA experts are included in this portion of the program to help logisticians select the right tasks for contracting.

Files. Only one program file is used in this portion of the program: OPT3.PRG. Data base files used by this program file are

TASKS1.DBF and OUTPUT.DBF. The structure and content of TASKS1.DBF are copied into OUTPUT.DBF at the beginning of the program. OUTPUT.DBF is used to record answers to applicability questions. OUTPUT.DBF is not erased or overwritten until this portion of the program is reused and the user specifically instructs dBASE III PLUS to overwrite this database file. If the user responds to the dBASE III PLUS question to overwrite OUTPUT.DBF with a no response, then OPT3.PRG will use OUTPUT.DBF with contents resulting from the last time the unique tailoring portion of the program was used.

There are four different report form files used to display the results from answering all questions posed to the user, one for each program phase. The report forms used are TLRDCON.FRM, TLRDDEM.FRM, TLRDFSD.FRM, and TLRDPROD.FRM.

Appendix I is OPT3.PRG. The structure of the report form files is explained on page 32.

Operations. The beginning of this program provides the user comments about the intended purpose of this portion of the program and a warning that leaving the program will result in the user having to start answering questions from the beginning of the program when it is re-entered. The first question asked is which acquisition phase the program will enter. This question is used to select one of the four output reports to display tailoring results.

The only difference between the output reports is the comments displayed by each of the reports. Comments from the applicability matrix of Mil-Std-1388-1A for the different acquisition phases are displayed in the output report for unique tailoring too. These comments help to provide cross check against the general applicability of tasks

and subtasks.

After selecting an acquisition phase, dBASE III PLUS will prompt the user to overwrite or not overwrite the database file OUTPUT.DBF. If the user decides to not overwrite it, dBASE III PLUS will be receiving conflicting commands between this response and programming statements within OPT3.PRG. The user will be asked to cancel, suspend, or ignore operations. If the intent is to re-enter the unique tailoring portion of the program and not lose answers from prior use of the program, then the user should respond by answering "I" for ignore. If a that is not the intent, the user should respond by answering "C" for cancel. This will take the user to the dBASE dot prompt, and the user will have to re-enter the LSA DSS program.

As with other portions of the program, this portion is menu driven. Questions synopsize the tasks and subtasks within Mil-Std-1388-1A and ask whether or not they should be done by the contractor. There are notes included with many questions from lessons learned by the LSA experts involved in this research. There are notes in this portion of the program for the following subtasks:

101.2.1	204.2.1	301.2.5	401.2.4
201.2.1	205.2.3	301.2.6	401.2.7
201.2.2	301.2.1	303.2.4	401.2.8
201.2.4	301.2.4	303.2.7	401.2.9
202	301.2.4.1	401.2.2	401.2.10
203.2.2	301.2.4.2	401.2.3	501.2.3

When answering questions the user is limited to providing a response within the range of answers shown on the screen. The exception is if the user decides to provide an answer that makes a particular subtask non-applicable. This answer can be given one of two ways. One answer in the range of possible answers displayed on the screen identify a task as non-

applicable. Answering with the responses zero, or the pre-programmed answer displayed on the screen, will also result in the task being identified as non-applicable. If the user hits the <Return> key without typing in another value, the program will proceed to the next question and leave the applicability of the subtask(s) the question pertained to unchanged. Just hitting the <Return> key allows the user to quickly go through areas in the tailoring portion that they know are not needed.

The user of the program is given the task and subtask numbers and titles with each question posed. Some questions may pertain to more than one subtask at a time. This was done in the interest of economy of questions.

As with the applicability matrix portion of the program, the user has the option to review the results from tailoring on the screen, have them sent to the printer, or stored in an ASCII file labelled LSADSS.TXT. The user has the option to review the output report as many times as desired before returning to the main menu.

LESSONS.PRG

Purpose. The LESSONS.PRG program file provides a menu of all the current AFALC LSA lessons learned. This portion of the program replicated the AFALC LSA Lessons Learned Bulletin. (16) It provides a ready reference of lessons learned on past acquisition efforts to help logisticians better tailor LSA requirements for their programs.

Files. This portion of the program uses one dBASE program file and 46 ASCII files that each contain a separate lesson learned. Appendix J is LESSONS.PRG.

The program file is a large DO CASE construct that reads the lessons learned files stored on a floppy disk in ASCII format. The program uses an the MS-DOS command to display the ASCII files containing the lessons learned a page at a time on the screen.

Operations. The menu of possible lessons learned is displayed in a sequence of five screens. The AFALC case study number and lesson topic are shown in the menu with a selection number to choose a particular lesson for review. Because the list of lessons learned takes five screens to be completely displayed, the user has the option to re-sroll through the list of lessons learned as many times as desired before returning to the main menu.

The menu display for LESSONS.PRG separates lessons into three areas as does the AFALC Bulletin. The areas are (1) LSA Application, (2) LSAR Data Management, and (3) Logistics Considerations.

Before a lesson is selected for review, the user must ensure that the floppy disk containing the lessons learned files is in the "A" drive of the computer. Once selected, the lesson learned will be displayed a page at a time.

This portion, like the descriptive portion of the overall program, only displays information to the screen. MS-DOS commands or a text editor can be used by individuals to print contents of the lessons learned files if desired.

Supporting Documentation

A users manual has been written for the LSA DSS program. The manual has four main sections: (1) general description, (2) installation

instructions, (3) operating instructions, and (4) updates. Appendix K is the users manual.

The general description section explains the purpose of the program, its main features, equipment requirements, and software and storage space requirements. The instructions assumed that the Zenith 248 computer with a hard disk drive was generally available in system program offices. Using dual floppy disk drives will likely require reorganization of the LSA DSS program files and minor changes to the dBASE III PLUS programming code, but those changes are not addressed in this research.

The second section of the users manual provides a short explanation to install the program files on a hard disk drive. An important note made in this section is the need to configure MS-DOS to accomodate the number of program files that are opened and used concurrently by the LSA DSS program. I have recommended in the manual that the users of this program set the CONFIG.SYS file in the root directory of their harddisk drive so BUFFERS=25 and FILES=25.

The third section of the manual provides instructions for starting the LSA DSS program. The dBASE III PLUS starting commands are given, and commands to access the LSA DSS program files through dBASE.

The last section provides contact points for updates to the program. AFALC/ERL is noted as the point of contact for the overall program, and AFALC/LSL is noted as the point of contact for AFALC lessons learned.

V. FINDINGS AND RECOMMENDATIONS

This chapter covers four areas: (1) the researcher's findings from this thesis effort, (2) a summary of the answers to the feedback questionnaire given to the LSA experts, (3) recommendations for enhancements to the LSA DSS program, and (4) recommendations for further research.

Researcher's Findings

The LSA DSS program is structured as originally intended and operates as originally planned. The completed program is user friendly; an individual does not need background knowledge in computers to load this program and use it on a Z248 microcomputer.

The completed program greatly expands the DSS that was developed by Capt Pierce in 1986. The sequential structure of questions in the LSA DSS is patterned after Capt Pierce's, but in the LSA DSS program the questions include guidance from LSA experts. Background information in the form of task and subtask descriptions, an applicability matrix for tasks and subtasks, and AFALC lessons learned are features in the LSA DSS that are not a part of any other known decision support system available to logisticians.

The program is easily expandable to include more comments and notes from lessons learned as they are gathered. Using a master data base to store much of the information used in the LSA DSS program will allow the program to be easily expanded to include a variety of information to

users with only minor modifications to the program.

Informal comments from individuals within AFALC working within the LSA area have been that this program would be very useful in AFALC's training program. The purpose of developing the program was to aid logisticians at the working level; its use as a training aid in AFALC's LSA course is an unexpected benefit of having developed it.

The programmer intended to include decision rules in the task tailoring portion of the program from interviews with LSA experts. The programmer thought adding decision rules could reduce the number of questions an individual must review to tailor tasks. The unexpected result was that experts preferred that decision rules to help tailor LSA tasks not be included. The reason given was that including decision rules could result in "boiler-plated" application of LSA tasks and subtasks. Experts preferred that the users of the program review each of the tasks and subtasks to determine their applicability to a particular acquisition effort.

In working with the LSA experts, the programmer also envisioned gathering more lessons learned from experts than were gathered. The problem of non-availability of LSA experts prevented this from occurring. Though LSA experts were given copies of the program to review and comment, the programmer found that the group meeting of experts generated more comments and more detailed comments than individuals reviewing the program alone. The synergistic affect of the group meeting was very beneficial; the freewheeling discussions that took place generated many of the lessons learned that were recorded during this meeting.

Feedback Questionnaire Responses

The feedback questionnaire was given to the three LSA experts after the researcher reviewed the completed LSA DSS program with each expert individually. This section summarizes their answers. The conclusion drawn from the questionnaire is that the LSA DSS program appears to be a worthwhile aid for logisticians and SPO's. Appendix D contains the questionnaire given to the experts.

Question #1 addressed the perceived usefulness of the LSA DSS program. One expert thinks it is extremely useful, and two think it is very useful.

Question #2 asked for recommended improvements to the program. The following recommendations were given:

- include more notes from lessons learned in the program
- show the interrelationship of tasks/subtasks such that if one task is rejected the program will "flag" a note that another task cannot be done without the results of a previous task which has been eliminated.
- expand the program to be able to identify as an output those tasks done by the government and those done by the contractor
- tailor the program to be useable on microcomputers with dual floppy drives

Question #3 asked if the LSA DSS program should be made available to SPO's. One expert strongly agreed and two experts agreed.

Question #4 asked if the experts were familiar with LOGPARS and CATSP expert systems being developed. None of the experts were familiar with either. Thus, there were no responses to Question #5 which asked if the experts thought either of these expert systems would make the LSA

DSS program of little benefit to SPO's.

Question #6 asked if experts agreed that capturing more historical knowledge in applying LSA to contractual efforts would be of benefit and should be done. All three experts strongly agreed.

Question #7 asked how more corporate knowledge should be gathered to improve the LSA DSS program. One expert selected answer (a). That answer was "working group meetings of LSA experts." Another expert selected answers (a), (b), and (c) from the questionnaire. Answer (b) was "surveying LSA experts and logisticians responsible for LSA management." Answer (c) was "through the use of the LSA DSS program; AFALC must encourage individuals to provide lessons learned in applying LSA from their acquisition efforts to improve the program." The third expert selected answer (b).

Researcher's Recommended Improvements to the Program

Important improvements to the computer program that have not been mentioned above that the programmer believes are worthwhile are as follows:

- (1) Review MRSA's LOGPARS program to see if decision rules used in the program may be useable in this program. This review should include a determination about the usefulness of this program in comparison to LOGPARS; whether this program should be maintained or shelved.
- (2) Verify that the task and subtask descriptions are understandable to inexperienced and experienced logisticians. If not, they should be rewritten or enhanced to be readily understood.

(3) Identify the applicability of LSA to commercial acquisition efforts, programs that combine off-the-shelf procurement with some development effort, modification efforts and deployment phase programs.

(4) Alter the program to allow individuals to access the description files for tasks and subtasks so task and subtask descriptions can be read while individuals use the unique tailoring portion of the program.

(5) Compile the program so the dBASE III PLUS program is not needed by program offices to use it. This will likely require some restructuring of the program.

(6) Relate the different tasks and subtasks to data item descriptions (DID's) that can be generated from those tasks and subtasks.

(7) Add memo fields to the database and an option within OPT3.PRG to copy statement of work verbiage and CDRL verbiage to a text file so that once tasks and subtasks are selected as applicable, an output report can be generated to help draft requests for proposals (RFP's).

(8) Identify those lessons learned that AFALC believes are of great interest.

(9) High interest items of management effectiveness inspectors in the area of LSA could be included in this program.

Recommendations for Further LSA Research

There are other areas within LSA that I believe warrant researching. The interrelationship of LSA with other contract requirements should be studied to determine if we are tasking contractors to make full use of LSA data and data automation in performing other contractual

requirements. For example, how are LSA developed operations and maintenance task descriptions being used by contractors to develop technical orders? Are contractors being encouraged to format technical orders from the LSA record, is that a practical thing to do, or is the Air Force routinely paying the contractor to type, review, and validate these task descriptions more than once?

The overlap of LSA and life cycle cost (LCC) analysis requirements in contracts is another area that could be studied. How are we contracting these two efforts? Are we ensuring that the contractors are making full use of the LSAR, its control number structure, cost information, and LSA tradeoffs in performing LCC analysis? Is there sufficient guidance to system program offices on how to tie these efforts together in requests for proposals (RFP's) and contracts, and how LSAR's could be used to develop LCC data and analyses?

Lastly, I think it is important that an Air Force data base be developed that will help track the costs and benefits of performing LSA and developing LSAR's. LSA can be very costly and can result in significant benefits and cost savings. Because programs have LSA costed differently by different contractors, perhaps a first step in developing a cost database for LSA efforts and benefits from those efforts would be determining a common approach that should be taken in costing LSA and mandating contractors follow that costing approach. This would eliminate many inconsistencies in cost information between acquisition efforts.

Logistic support analysis can be a monumental effort levied on contractors, or tailored to be a low cost, low level of effort requirement. It is important that the government knows what it wants as a result of levying LSA requirements on contractors, how LSA requirements

relate to other contract taskings, how to manage LSA efforts, and what we should be paying for LSA efforts. I highly encourage more research in this area; the possibilities for research in the area of LSA are unbounded.

Appendix A

CGADS LSA QUESTIONS

CONCEPTUAL PHASE QUESTIONS
TO TAILOR LOGISTIC SUPPORT ANALYSIS (LSA) TASKS & SUBTASKS
COMPUTER GENERATED ACQUISITION DOCUMENTS SYSTEM (CGADS)

1. Will the contractor be required to develop an early logistic support analysis strategy?
2. Do you require documentation on support factors for the new system?
3. Do you want to maximize the use of existing resources (hardware, software, trained manpower, etc.) in the newly designed system?
4. Do you need a baseline comparison system (BCS) to determine support parameters or support, cost and readiness drivers for the new system?
5. Do you want the contractor to explore new technological advances and their impact on system support?
6. Do you want the contractor to establish support objectives, goals and thresholds for the new system?
7. Do you want to identify the operating and support functions needed to keep the new equipment operating?
8. Do you want the contractor to propose and evaluate alternative system level support concepts for the system?
9. Do you want the contractor to formulate a test strategy that ensures that support considerations will be included in the test program?
10. Have any of your previous responses made an LSA Plan mandatory? (CGADS will provide an indication after one answers the above questions whether or not a plan is mandatory.)
11. Is this a joint program?

DEMONSTRATION/VALIDATION PHASE QUESTIONS
TO TAILOR LOGISTIC SUPPORT ANALYSIS (LSA) TASKS & SUBTASKS
COMPUTER GENERATED ACQUISITION DOCUMENTS SYSTEM (CGADS)

1. Same as question 1 above.
2. Same as question 2 above.
3. Same as question 3 above.
4. Same as question 4 above.
5. Same as question 5 above.
6. Same as question 6 above.
7. Same as question 7 above.
8. Same as question 8 above.
9. No question 9 appeared.
10. Do you want the contractor to perform a transportability analysis on this system?
11. Do you want the contractor to consider supportability in developing and conducting his test program?
12. Have any of the previous responses made an LSA Plan mandatory or was an LSA Plan written during an earlier phase of this program?
13. Has the conceptual phase been pursued contractually and broad planning on ILS been obtained from the contractor?
14. Will the electronic system you are acquiring require automatic test equipment (ATE) for logistics support?
15. Has an appropriate maintenance concept (MC) been defined and included in the system/equipment specification?
16. Has LSA Task 302, support system alternatives, been tailored and accomplished, and have the results been included in the ILSP/maintenance concept?
17. Will contractor preoperational maintenance support be required?
18. Will work be done at a government facility?

FULL-SCALE DEVELOPMENT PHASE QUESTIONS
TO TAILOR LOGISTIC SUPPORT ANALYSIS (LSA) TASKS & SUBTASKS
COMPUTER GENERATED ACQUISITION DOCUMENTS SYSTEM (CGADS)

1. Same as question 2 above.
2. Same as question 3 above.
3. Same as question 4 above.
4. Same as question 5 above.
5. Do you want the contractor to establish or update support design constraints and include them in LSA documentation, system specifications, etc.?
6. Do you want to identify the operations and support tasks needed to keep the new equipment operating?
7. Do you want the contractor to propose and evaluate alternative support concepts for the system?
8. Do you want a repair level analysis performed?
9. Do you want the contractor to analyze the operations and maintenance tasks to provide source data for provisioning, technical manuals, training, manpower lists, etc.?
10. Do you want the contractor to assess the impact of introducing the new system?
11. Do you want to conduct survivability analyses to determine changes in support requirements based on combat usage?
12. Do you want to assess how well the contractor has achieved his stated support requirements and goals?
13. Was LSA placed on contract for an earlier phase of the program?
14. Have any of your previous responses made an LSA Plan mandatory or was an LSA Plan written during an earlier phase of this program?
15. Is this a joint service program?

PRODUCTION PHASE QUESTIONS
TO TAILOR LOGISTIC SUPPORT ANALYSIS (LSA) TASKS & SUBTASKS
COMPUTER GENERATED ACQUISITION DOCUMENTS SYSTEM (CGADS)

1. Is post production support analysis required?
2. Do you need analysis of support data as it becomes available from standard supply, maintenance and readiness reporting system?
3. Are you making any significant changes in the equipment during this phase? (If so, CGADS suggests the user to use the tailoring for development phase programs.)
4. Was LSA placed on contract for the FSD phase of the program?
5. Did you previously answer yes to any of the following requirements:
a post production analysis,
analysis of test data, or
update of existing LSA due to changes in system configuration?

Appendix B
DESCRIBE.PRG Program Files

```
*****  
*          *  
*  T100.PRG  *  
*          *  
*****
```

*This is a subprogram to DESCRIBE.PRG to choose one of the three tasks
*within the 100 Series tasks.

```
DO WHILE .T.  
CHOICE=0  
CLEAR  
TEXT
```

100 Series - Program Planning and Control

Which of the following 100 Series tasks would you like to review?

- (1) Task 101 - Development of an Early LSA Strategy
- (2) Task 102 - Logistic Support Analysis Plan
- (3) Task 103 - Program and Design Review
- (4) Return to the previous menu

```
ENDTEXT  
@20,10 SAY 'What is your choice? ' GET CHOICE;  
      PICTURE "9" RANGE 1,4  
READ  
DO CASE  
  CASE CHOICE=1  
    DO T101  
  CASE CHOICE=2  
    DO T102  
  CASE CHOICE=3  
    DO T103  
  CASE CHOICE=4  
    RETURN  
ENDCASE  
LOOP  
ENDDO
```

```
*****  
*          *  
*  T101.PRG  *  
*          *  
*****
```

*This is a subprogram to T100.PRG, a subprogram to DESCRIBE.PRG, a
*subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

The purpose of Task 101 (Development of an Early LSA Strategy) is to
identify those LSA tasks that provide the government the best return
on investment.

Which of the following subtasks would you like to review?

- (1) 101.2.1 - LSA strategy
- (2) 101.2.2 - Updates
- (3) Review all subtasks
- (4) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

DO T1121

CASE CHOICE=2

DO T1122

CASE CHOICE=3

DO T1121

DO T1122

CASE CHOICE=4

RETURN

ENDCASE

LOOP

ENDDO

```
*****  
*          *  
*  T1121.PRG  *  
*          *  
*****
```

CLEAR

TEXT

The purpose of Task 101 (development of an early LSA strategy) is to identify those LSA tasks that provide the government the best return on investment.

Task 101.2.1 requires the contractor to identify supportability objectives for the new system and identify proposed LSA tasks and subtasks to be performed with an estimated cost of performing each task. This task is most germane to the concept exploration phase, but is generally applicable prior to any acquisition effort.

Proposed supportability objectives are based on: (a) probable design, maintenance concept, and operational approaches for the new system and gross estimates of the R&M, O&S, costs, logistic resources, and readiness characteristics of each design and operational approach;

(b) availability, accuracy, and relevance of readiness, O&S cost, and logistic support resources data required to perform the proposed LSA tasks and subtasks;

ENDTEXT

WAIT

CLEAR

TEXT

(c) the potential design impact of performing the LSA tasks and subtasks;

and (d) the cost effectiveness of each task and subtask given projected cost and schedule constraints.

ENDTEXT

WAIT

* *
* T1122.PRG *
* *

CLEAR

TEXT

Task 101.2.2 (updates to LSA strategy) requires the contractor to update the analysis done under Task 101.2.1 based on analysis results, program schedule modifications, and program decisions.

ENDTEXT

WAIT

* *
* T102.PRG *
* *

*This is a subprogram to T100.PRG, which is a subprogram to DESCRIBE.PRG,
*which is a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

The purpose of Task 102 (Logistic Support Analysis Plan) is to develop and update a plan that identifies and integrates all LSA tasks, identifies management responsibilities and activities, and outlines the approach toward accomplishing analysis tasks.

Which of the following subtasks would you like to review?

- (1) 102.2.1 - LSA Plan
- (2) 102.2.2 - Updates
- (3) Review all subtasks
- (4) Return to the previous menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

DO T1221

CASE CHOICE=2

DO T1222

CASE CHOICE=3

DO T1221

DO T1222

CASE CHOICE=4

RETURN

ENDCASE

LOOP

ENDDO

* * * * *
* T1221.PRG *
* * * * *

CLEAR

TEXT

Subtask 102.2.1 requires the contractor to develop the LSA plan, and states that it can be a part of the integrated support plan (ISP). The LSA plan can include the following:

- a. A description of how the LSA program will be conducted to meet program requirements
- b. A description of the management structure and authorities applicable to LSA. This includes the interrelationship between line, service, staff, and policy organizations.
- c. Identification of each LSA task and how it will be performed. This includes identification of tradeoff analyses to be performed under Task 303.2.3.
- d. A schedule of LSA activities with start and completion dates. Schedule relationships with ILS program requirements and associated system engineering activities shall be identified.

ENDTEXT

WAIT

CLEAR

TEXT

e. A description of how LSA tasks and data will interface with other ILS and system oriented tasks and data (e.g., interface with design program, reliability program, human engineering program, initial provisioning program, and technical publications program).

f. Identification of the work breakdown structure (WBS) and which items in the WBS LSA will be performed.

g. Explanation of the LSA control numbering system

h. The method by which supportability and supportability related design requirements are disseminated to designers and associated personnel.

i. The method supportability and supportability related design requirements are disseminated to subcontractors and the controls levied under such circumstances.

j. Government data to be provided to the contractor.

ENDTEXT

WAIT

CLEAR

TEXT

k. Procedures for updating and validating LSA data to include configuration control procedures for LSA data

l. LSA requirements on Government furnished equipment/material and subcontractor/vendor furnished materiel including end items of support equipment.

m. The procedures (where existent) to evaluate the status and control of each task, and identification of the organizational unit with

the authority and responsibility for executing each task

n. The procedures, methods, and controls for identifying and recording design problems or deficiencies affecting supportability, corrective actions required, and the status of actions taken to resolve the problems.

o. Description of the data collection system to be used by the performing activity to document, disseminate, and control LSA and related design data.

ENDTEXT

WAIT

CLEAR

TEXT

NOTE: The LSA plan is a dynamic document that should be updated to reflects current program status and planned actions.

NOTES FROM EXPERIENCE:

Recommend that the LSA Plan be acquired separately from the ISP. The LSAP can (and likely should) be a contractually binding document. It is hard to use the contractual leverage of the LSA Plan to manage the LSA effort if it is a part of the ISP. Also, strongly recommend that the LSA Plan be delivered in time to be reviewed at the LSA Guidance Conference.

Some contractors have corporate operating instructions for LSA performance and how problems are solved between functional groups. It is wise to ask, informally, for a copy of that document.

For source selections, delivery of a draft LSA plan can be very beneficial in understanding how the contractor perceives accomplishing the LSA effort and ensuring the contractor understands the government's requirements.

ENDTEXT

WAIT

CLEAR

* *
* T1222.PRG *
* *

CLEAR

TEXT

Task 102.2.2 requires the contractor to update the LSA plan, subject to government approval, based on analysis results, program schedule changes, and program decisions.

ENDTEXT
WAIT

* *
* T103.PRG *
* *

*This is a subprogram to T100.PRG, which is a subprogram to DESCRIBE.PRG,
*which is a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

Task 103 (Program and Design Reviews) establishes a requirement for the contractor to plan and provide for official review and control of released design information with LSA Program participation in a timely and controlled manner, and to assure that the LSA program is proceeding in accordance with the contractual milestones so that the supportability and supportability related design requirements will be achieved.

NOTES FROM EXPERIENCE:

LSA Reviews should be planned to be conducted in conjunction with design and program reviews critical in a demonstration/validation program. In an FSED Program, LSA should be planned to be conducted in conjunction with program and design reviews with some LSA reviews planned separately from the other reviews.

ENDTEXT

WAIT

CLEAR

TEXT

Which of the following subtasks would you like to review?

- (1) 103.2.1 - Establish review procedures
- (2) 103.2.2 - Design reviews
- (3) 103.2.3 - Program reviews
- (4) 103.2.4 - LSA reviews
- (5) All subtasks
- (6) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,6

READ

```
DO CASE
  CASE CHOICE=1
    DO T1321
  CASE CHOICE=2
    DO T1322
  CASE CHOICE=3
    DO T1323
  CASE CHOICE=4
    DO T1324
  CASE CHOICE=5
    DO T1321
    DO T1322
    DO T1323
    DO T1324
  CASE CHOICE=6
    RETURN
  ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*  T1321.PRG  *
*          *
*****
```

CLEAR
TEXT

Task 103.2.1 requires the contractor to establish and document review procedures. This includes defining accept/reject criteria pertaining to supportability requirements, the method of documenting reviews, the types of design documentation subject to review, and the degree of authority of each reviewing activity.

ENDTEXT
WAIT

```
*****
*          *
*  T1322.PRG  *
*          *
*****
```

CLEAR
TEXT

Subtask 103.2.2 requires that supportability and supportability related design contract requirements be an integral part of each system/equipment design review (e.g., SDR's, PDR's, and CDR's). The following topics, as a minimum, should be covered in reviews relative to LSA:

- a. LSA conducted by task and WBS element

b. supportability assessment of proposed design features including supportability, cost, and readiness drivers and new or critical logistic support resource requirements

c. corrective actions considered, proposed, or taken

d. review of supportability and supportability design requirements (with review of specifications as developed).

e. progress towards achieving supportability goals

ENDTEXT

WAIT

CLEAR

TEXT

f. LSA documentation required, completed, and scheduled

g. design, schedule, or analysis problems affecting supportability

h. status of previous action items and actions required

i. other topics and issues as appropriate

ENDTEXT

WAIT

CLEAR

* *
* T1323.PRG *
* *

CLEAR

TEXT

Subtask 103.2.3 requires that reviews of supportability and supportability design requirements be an integral part of system program reviews.

ENDTEXT

WAIT

* *
* T1324.PRG *
* *

CLEAR

TEXT

Subtask 103.2.4 requires LSA reviews be planned and scheduled to assess the status of the LSA program. This task requires development of agendas for LSA reviews, and documenting results of reviews. The LSA program is reviewed in greater depth at LSA reviews than at design and program reviews.

NOTES FROM EXPERIENCE:

LSA reviews are frequently geared to a program's activity; mostly quarterly reviews are planned at the front end of a program. Depending upon the length of an acquisition effort, after a year or more reviews are held semi-annually.

Do not hold LSA reviews at the same time as ILS management team meetings if it means key individuals needed at both meetings will be faced with a conflict of reviews.

LSA reviews are best held prior to technical reviews. This helps ensure the LSA effort is kept up to date with the engineering effort.

ENDTEXT
WAIT
CLEAR
TEXT

NOTES FROM EXPERIENCE: (con't.)

Emphasis in LSA reviews should be on engineering through the midpoint of FSED programs.

Prior to LSA reviews, have LSA documentation delivered if it is not too voluminous. At least a sampling of the documentation should be delivered; the same documentation that will be covered at the LSA review. Delivery 30 days prior to the LSA review should be sufficient time to prepare for it.

ENDTEXT
WAIT

* *
* T200.PRG *
* *

*This is a subprogram to DESCRIBE.PRG to choose on the five tasks
*within the 200 Series LSA tasks

DO WHILE .T.
CHOICE=0
CLEAR

TEXT

200 Series Tasks - Mission and Support Systems Definition

Which of the 200 Series tasks would you like to review?

- (1) Task 201 - Use Study
- (2) Task 202 - Mission Hardware, Software, and Support System Standardization
- (3) Task 203 - Comparative Analysis
- (4) Task 204 - Technological Opportunities
- (5) Task 205 - Supportability and Supportability Related Design Factors
- (6) Return to previous menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,6

READ

DO CASE

CASE CHOICE=1

DO T201

CASE CHOICE=2

DO T202

CASE CHOICE=3

DO T203

CASE CHOICE=4

DO T204

CASE CHOICE=5

DO T205

CASE CHOICE=6

RETURN

ENDCASE

LOOP

ENDDO

* *
* T201.PRG *
* *

*This is a subprogram to T200.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.
CLEAR
CHOICE=0

TEXT

The purpose of Task 201 (Use Study) is to identify and document the pertinent supportability factors related to the intended use of the new system/equipment. This task is the prerequisite analysis task to all others in an LSA program.

Which of the following subtasks would you like to review?

- (1) 201.2.1 - Supportability factors
- (2) 201.2.2 - Quantitative factors
- (3) 201.2.3 - Field visits
- (4) 201.2.4 - Use study report and updates
- (5) Review all subtasks
- (6) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,6

READ

DO CASE

CASE CHOICE=1

DO T2121

CASE CHOICE=2

DO T2122

CASE CHOICE=3

DO T2123

CASE CHOICE=4

DO T2124

CASE CHOICE=5

DO T2121

DO T2122

DO T2123

DO T2124

CASE CHOICE=6

RETURN

ENDCASE

LOOP

ENDDO

* *
* T2121.PRG *
* *

CLEAR

TEXT

Subtask 201.2.1 requires the contractor to identify and document the

pertinent supportability factors related to the intended use of the new system/equipment. Factors to be considered include mobility requirements, deployment scenarios, mission frequency and duration, basing concepts, anticipated service life, interactions with other systems/end items, operational environment, and human capabilities and limitations. Both peacetime and wartime employment shall be considered in identifying the supportability factors. Previously conducted mission area and weapon system analyses which quantified relationships between hardware, mission, and supportability parameters and which are pertinent to the new system/equipment shall be identified and documented.

ENDTEXT
WAIT

* *
* T2122.PRG *
* *

CLEAR
TEXT

Subtask 201.2.2 requires the contractor to document the quantitative data resulting from identification of pertinent supportability factors (i.e., results of Task 201.2.1) which must be considered in developing support alternatives and conducting support analysis. This data should include, but not be limited to:

- a. operating requirements (number of missions per time unit, mission duration, and number of operating days, miles, hours, firings, flights, or cycles per unit of time),
- b. number of systems supported,
- c. transportation factors,
- d. allowable maintenance periods, and
- e. environmental requirements.

ENDTEXT
WAIT

* *
* T2123.PRG *
* *

CLEAR
TEXT

Subtask 201.2.3 requires field visits by the contractor to operational units and support activities which most closely represent the planned operational and support environment for the new system/equipment.

Field visits to operational units and depots can provide a significant input into the use study in terms of identifying existing capabilities, resources, and problems. Field visits can be useful once the operational environment for the new system/equipment is identified in sufficient detail to determine existing operational units and depots that would likely be involved in the operations and support of the new system/equipment.

NOTES FROM EXPERIENCE:

Early identification of sites to be visited is important to avoid schedule problems at the site. The government should identify the locations that should be visited. To avoid problems in setting up visits, the government should contact sites to be visited identifying the number of people visiting, dates, length of visits, ensure contractor visit requests are properly forwarded to the visiting site, and should plan to escort the contractor into the site.

ENDTEXT
WAIT

* *
* T2124.PRG *
* *

CLEAR
TEXT
Subtask 201.2.4 requires the contractor prepare a use study report documenting the results of use study analysis and field visits (Tasks 201.2.1, 201.2.2, and 201.2.3) and to update the use study report as more detailed information on the intended use of the system becomes available.

ENDTEXT
WAIT

* *
* T202.PRG *
* *

*This is a subprogram to T200.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR
CHOICE=0
TEXT

The purpose of Task 202 (Mission Hardware, Software, and Support System Standardization) is to define supportability and supportability related design constraints for the new system/equipment based on existing and planned logistic support resources which have benefits due to cost, manpower, personnel, readiness, or support policy considerations, and to provide supportability input into mission hardware and software standardization efforts.

Some benefits of standardizing the new system hardware, software, and/or its support system with existing systems (and systems currently under development) includes:

- avoided development cost for new items
- avoided cost of new training programs for the new items
- probability the resource will be available for use may be greater
- commonality between systems reduces unit resource requirements thus helping to improve mobility of units
- personnel proficiency may increase from increased frequency of use of the same item.

ENDTEXT

WAIT

CLEAR
TEXT

Which of the following subtasks would you like to review?

- (1) 202.2.1 - Supportability factors
- (2) 202.2.2 - Supportability characteristics
- (3) 202.2.3 - Recommended approaches
- (4) 202.2.4 - Risks
- (5) Review all subtasks
- (6) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,6

READ

DO CASE
CASE CHOICE=1
DO T2221
CASE CHOICE=2
DO T2222
CASE CHOICE=3
DO T2223
CASE CHOICE=4

```
DO T2224
CASE CHOICE=5
  DO T2221
  DO T2222
  DO T2223
  DO T2224
CASE CHOICE=6
  RURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*  T2221.PRG  *
*          *
*****
```

```
CLEAR
TEXT
```

Subtask 202.2.1 requires the contractor to identify existing and planned logistic support resources which have potential benefits for use on each system/equipment concept under consideration. All elements of ILS shall be considered. It defines in quantitative terms supportability and supportability related design constraints for those items which should become program constraints due to cost, manpower, personnel, readiness, or support policy considerations and benefits.

```
ENDTEXT
WAIT
```

```
*****
*          *
*  T2222.PRG  *
*          *
*****
```

```
CLEAR
TEXT
```

Subtask 202.2.2 requires the contractor to provide supportability, cost, and readiness related information into mission hardware and software standardization efforts. This input shall be provided to a level commensurate with the level of mission hardware and software standardization being pursued.

```
ENDTEXT
WAIT
```

*
* T2223.PRG *
*

CLEAR

TEXT

Subtask 202.2.3 requires the contractor to identify recommended mission hardware and software standardization approaches which have utility due to cost, readiness, or supportability considerations and participate in the system/equipment standardization effort. This task is performed to a level commensurate with the design development.

ENDTEXT

WAIT

*
* T2224.PRG *
*

CLEAR

TEXT

Subtask 202.2.4 requires the contractor to identify any risks associated with each constraint established. For example, known or projected scarcities, and developmental logistic support resources would represent possible risk areas when establishing standardization constraints.

ENDTEXT

WAIT

*
* T203.PRG *
*

*This is a subprogram to T200.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

The purpose of Task 203 (Comparative Analysis) is to select or develop a Baseline Correlation System (BCS) representing characteristics of the new system/equipment. The BCS is also called a historical data review. It involves making good use of experience information available from other systems/equipment so that the new system will be an improvement in supportability as well as in performance.

Which of the following subtasks would you like to review?

- (1) 203.2.1 - Identify comparative systems
- (2) 203.2.2 - Baseline comparison system
- (3) 203.2.3 - Comparative system characteristics
- (4) 203.2.4 - Qualitative supportability factors
- (5) 203.2.5 - Supportability, cost, & readiness drivers
- (6) 203.2.6 - Unique system drivers
- (7) 203.2.7 - Updates
- (8) 203.2.8 - Risks and assumptions
- (9) Review all subtasks
- (10) Return to the previous menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "99" RANGE 1,10

READ

DO CASE

CASE CHOICE=1

DO T2321

CASE CHOICE=2

DO T2322

CASE CHOICE=3

DO T2323

CASE CHOICE=4

DO T2324

CASE CHOICE=5

DO T2325

CASE CHOICE=6

DO T2326

CASE CHOICE=7

DO T2327

CASE CHOICE=8

DO T2328

CASE CHOICE=9

DO T2321

DO T2322

DO T2323

DO T2324

DO T2325

DO T2326

DO T2327

DO T2328

CASE CHOICE=10

RETURN

ENDCASE

LOOP

ENDDO

```
*****  
*          *  
*  T2321.PRG  *  
*          *  
*****
```

CLEAR

TEXT

Subtask 203.2.1 requires the contractor to identify existing systems and subsystems (hardware, operational, and support) useful for comparative purposes with new system/equipment alternatives. Different existing systems are identified when new system/equipment alternatives vary significantly in design, operation, or support concepts, or where different existing systems are required to adequately compare all parameters of interest.

ENDTEXT

WAIT

```
*****  
*          *  
*  T2322.PRG  *  
*          *  
*****
```

CLEAR

TEXT

Subtask 203.2.2 requires the contractor to select or develop a Baseline Comparison System (BCS) for use in comparative analysis and identifying supportability, cost, and readiness drivers of each significantly different new system/equipment alternative. A BCS may be developed using a composite of elements from different existing systems when a composite most closely represents the design, operation, and support characteristics of a new system/equipment alternative. Different BCS's or composites may be useful for comparing different parameters of interest. Previously developed BCS's shall be assessed to determine the extent to which they can fill the need for the new system/equipment.

ENDTEXT

WAIT

```
*****  
*          *  
*  T2323.PRG  *  
*          *  
*****
```

CLEAR

TEXT

Subtask 203.2.3 requires the contractor to determine the O&S costs, logistic support resource requirements, R&M values, and readiness values

of the comparative systems identified. These values are established at the system and subsystem level for each BCS established. Values are adjusted to account for differences between the comparative system's use profile and the new system/equipment's use profile where appropriate.

ENDTEXT
WAIT

```
*****  
*          *  
*  T2324.PRG  *  
*          *  
*****
```

CLEAR
TEXT

Subtask 203.2.4 requires the contractor to identify qualitative supportability problems on comparative systems which should be prevented on the new system/equipment.

ENDTEXT
WAIT

```
*****  
*          *  
*  T2325.PRG  *  
*          *  
*****
```

CLEAR
TEXT

Subtask 203.2.5 requires the contractor to determine the supportability, cost, and readiness drivers of each comparative system or BCS. These drivers may come from the design, operating, or support characteristics of the comparative systems and represent drivers for the new system/equipment. For example, repair cycle time may be the prime readiness driver, a particular hardware subsystem may be the prime manpower driver, or energy cost may be the prime cost driver.

ENDTEXT
WAIT

```
*****  
*          *  
*  T2326.PRG  *  
*          *  
*****
```

CLEAR
TEXT

Subtask 203.2.6 requires the contractor to identify and document any

supportability, cost, or readiness drivers for the new system/equipment resulting from subsystems or equipment in the new system for which there are no comparable subsystems or equipment in comparative systems.

ENDTEXT
WAIT

* *
* T2327.PRG *
* *

CLEAR
TEXT
Subtask 203.2.7 requires the contractor to update comparative analysis and supportability, cost, and readiness drivers as alternatives become better defined or as better data is obtained.

ENDTEXT
WAIT

* *
* T2328.PRG *
* *

CLEAR
TEXT
Subtask 203.2.8 requires the contractor to identify and document risks and assumptions associated with the comparative systems, and their associated parameters and drivers, such as a low degree of similarity between the new system/equipment and existing systems or the lack of accurate data on existing systems.

ENDTEXT
WAIT

* *
* T204.PRG *
* *

*This is a subprogram to T200.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.
CLEAR

CHOICE=0

TEXT

The purpose of Task 204 (Technological Opportunities) is to identify potential technological approaches to achieve new system/equipment improvements. Particular attention should be devoted to the application of technological advancements to system/equipment drivers and areas where qualitative problems were identified on comparative systems.

Improvements should be prioritized based on the contribution of each to system and subsystem level supportability values.

Which of the following subtasks would you like to review?

- (1) 204.2.1 - Recommended design approaches
- (2) 203.2.2 - Updates
- (3) 203.2.3 - Risks
- (4) Review all subtasks
- (5) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,5

READ

DO CASE

CASE CHOICE=1

DO T2421

CASE CHOICE=2

DO T2422

CASE CHOICE=3

DO T2423

CASE CHOICE=4

DO T2421

DO T2422

DO T2423

CASE CHOICE=5

RETURN

ENDCASE

LOOP

ENDDO

* *
* T2421.PRG *
* *

CLEAR

TEXT

Task 204.2.1 requires the contractor to establish technology approaches to achieve supportability improvements on the new system/equipment

over existing systems and subsystems. These design approaches are established through:

- a. Identifying technological advancements and other design improvements which can be exploited in the new system/equipment's development
- b. Estimating the resultant improvements that would be achieved in the supportability, cost, and readiness values.
- c. Identifying design improvements to logistic elements (such as support equipment and training devices) that can be applied during the new system development to increase the effectiveness of the support system or enhancing system readiness

NOTE: Knowledge of current lab work may be instrumental in the accomplishment of this subtask.

ENDTEXT
WAIT

* *
* T2422.PRG *
* *

CLEAR
TEXT
Task 204.2.2 requires the contractor to update the design objectives as new system/equipment alternatives become better defined as a result of studying technological opportunities.

ENDTEXT
WAIT

* *
* T2423.PRG *
* *

CLEAR
TEXT
Task 204.2.3 requires the contractor to identify any risks associated with the design objectives established, any development and evaluation approaches needed to verify the improvement potential, and any cost or schedule impact to implement the potential improvements.

ENDTEXT

WAIT

```
*****  
*          *  
*  T205.PRG  *  
*          *  
*****
```

*This is a subprogram to T200.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

The purpose of Task 205 (Supportability and Supportability Related Design Factors) is to establish the supportability parameters governing the new system/equipment's development.

Which of the following subtasks would you like to review?

- (1) 205.2.1 - Supportability characteristics
- (2) 205.2.2 - Supportability objectives & associated risks
- (3) 205.2.3 - Specification requirements
- (4) 205.2.4 - NATO constraints
- (5) 205.2.5 - Supportability goals and thresholds
- (6) Review all subtasks
- (7) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,7

READ

DO CASE

CASE CHOICE=1

DO T2521

CASE CHOICE=2

DO T2522

CASE CHOICE=3

DO T2523

CASE CHOICE=4

DO T2524

CASE CHOICE=5

DO T2525

CASE CHOICE=6

DO T2521

```
DO T2522
DO T2523
DO T2524
DO T2525
CASE CHOICE=7
RETURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*  T2521.PRG  *
*          *
*****
```

CLEAR
TEXT

Task 205.2.1 requires the contractor to identify the quantitative characteristics resulting from alternative design and operational concepts for the new system/equipment. Supportability characteristics are expressed in terms of feasible support concepts, R&M parameters, system readiness, O&S cost, and logistic support resource requirements. Both peacetime and wartime requirements are included.

This task further requires the contractor to conduct sensitivity analysis on the variables associated with the supportability, cost, and readiness drivers for the new system/equipment.

Any hardware or software that the government will not or may not have full design rights should be identified by the contractor under this task, with alternatives.

ENDTEXT
WAIT

```
*****
*          *
*  T2522.PRG  *
*          *
*****
```

CLEAR
TEXT

Task 205.2.2 requires the contractor to establish supportability, cost, and readiness objectives for the new system. Risks and uncertainties involved in achieving the objectives established should be identified by the contractor. Identification of supportability risks associated with new technology planned for the new system/equipment is also required.

ENDTEXT
WAIT

* *
* T2523.PRG *
* *

CLEAR
TEXT

Task 205.2.3 requires the contractor to establish supportability and supportability related design constraints which will be included in specifications and other requirements documents. This includes both quantitative and qualitative constraints. Quantitative constraints should be documented in the LSA Record, or equivalent format approved by the government.

ENDTEXT
WAIT

* *
* T2524.PRG *
* *

CLEAR
TEXT

Task 205.2.4 requires the contractor to identify any constraints that preclude adoption of a NATO system/equipment to satisfy the mission need.

ENDTEXT
WAIT

* *
* T2525.PRG *
* *

CLEAR
TEXT

Task 205.2.5 requires the contractor to update the supportability, cost, and readiness objectives and established supportability, cost, and readiness goals and thresholds as new system/equipment alternatives become better defined.

ENDTEXT

WAIT

```
*****  
*          *  
*  T300.PRG  *  
*          *  
*****
```

*This is a subprogram to DESCRIBE.PRG to choose on the three tasks
*within the 300 Series LSA tasks

DO WHILE .T.

CHOICE=0

CLEAR

TEXT

300 Series Tasks - Preparation and Evaluation of Alternatives

Which of the following 300 Series tasks would you like to review?

- (1) Task 301 - Functional Requirements Identification
- (2) Task 302 - Support System Alternatives
- (3) Task 303 - Evaluations of Alternatives and Tradeoff Analysis
- (4) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

DO T301

CASE CHOICE=2

DO T302

CASE CHOICE=3

DO T303

CASE CHOICE=4

RETURN

ENDCASE

LOOP

ENDDO

```
*****  
*          *  
*  T301.PRG  *  
*          *  
*****
```

*This is a subprogram to T300.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

The purpose of Task 301 (Functional Requirements Identification) is to identify the operations and support functions that must be performed for each system/equipment alternative under consideration, and then identify the tasks that must be performed in order to operate and maintain the new system/equipment in its intended environment. The output of this task is the basis for detailed operations and maintenance procedures developed under Task 401 (Task Analysis). Emphasis should be placed on supportability, cost, and readiness drivers, and include both peacetime and wartime functions.

Which of the following subtasks would you like to review?

- (1) 301.2.1 - Functional requirements
- (2) 301.2.2 - Unique functional requirements
- (3) 301.2.3 - Risks
- (4) 301.2.4 - Operations and maintenance tasks
- (5) 301.2.5 - Design alternatives
- (6) 301.2.6 - Updates
- (7) Review all subtasks
- (8) Return to the previous menu

ENDTEXT

@22,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,8

READ

DO CASE

CASE CHOICE=1

DO T3121

CASE CHOICE=2

DO T3122

CASE CHOICE=3

DO T3123

CASE CHOICE=4

DO T3124

CASE CHOICE=5

DO T3125

CASE CHOICE=6

DO T3126

CASE CHOICE=7

DO T3121

DO T3122

DO T3123

DO T3124

DO T3125

DO T3126

CASE CHOICE=8

```
RETURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*  T3121.PRG  *
*          *
*****
```

```
CLEAR
TEXT
```

Task 301.2.1 requires the contractor to identify and document the functions that must be performed for the new system/equipment to be operated and maintained in its intended operational environment for each alternative under consideration. These functions are identified to a level commensurate with design and operational scenario development, and include both peacetime and wartime functions.

```
ENDTEXT
WAIT
```

```
*****
*          *
*  T3122.PRG  *
*          *
*****
```

```
CLEAR
TEXT
```

Task 301.2.2 requires the contractor to identify those functional requirements which are unique to the new system/equipment due to new design technology or operational concepts, or which are supportability, cost, or readiness drivers.

```
ENDTEXT
WAIT
```

```
*****
*          *
*  T3123.PRG  *
*          *
*****
```

```
CLEAR
TEXT
```

Task 301.2.3 requires the contractor to identify any risks involved in satisfying the functional requirements of the new system.

ENDTEXT
WAIT

*
* T3124.PRG *
*

CLEAR
TEXT

Task 301.2.4 requires the contractor to identify the operations and maintenance tasks for the new system/equipment based on the functional requirements from Task 301.2.1. Tasks are identified to a level commensurate with design and operational scenario development, and cover all functions which require logistics support resources.

NOTE: This subtask is a part of technical orders development; this should be considered when planning other T.O. contract tasks. This subtask provides input to the task analysis of Task 401. Timely development of FMECA, RCM, RLA, and other engineering analysis is essentially for the input of the results of that work to be of benefit to logistics analyses.

Tasks are identified through:

- Task 301.2.4.1 - failure modes, effects, and criticality analysis (FMECA)
- Task 301.2.4.2 - reliability centered maintenance (RCM)
- Task 301.2.4.3 - analysis other than FMECA or RCM to identify required tasks

ENDTEXT
WAIT

*
* T3125.PRG *
*

CLEAR
TEXT

Task 301.2.5 requires the contractor to participate in formulating design alternatives to correct design deficiencies uncovered during the identification of functional requirements or operations and maintenance task requirements. Design alternatives which reduce or simplify functions requiring logistic support resources should be analyzed by the contractor.

ENDTEXT

WAIT

```
*****  
*          *  
*  T3126.PRG  *  
*          *  
*****
```

CLEAR

TEXT

Task 301.2.6 requires the contractor to update the functional and requirements and operations and maintenance task requirements as the new system/equipment becomes better defined and better data becomes available.

ENDTEXT

WAIT

```
*****  
*          *  
*  T302.PRG  *  
*          *  
*****
```

*This is a subprogram to T300.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

The purpose of Task 302 (Support System Alternatives) is to establish viable support system alternatives for the new system/equipment for evaluation, tradeoff analysis, and determination of the best system for development.

Which of the following subtasks would you like to review?

- (1) 302.2.1 - Alternative support concepts
- (2) 302.2.2 - Support concepts updates
- (3) 302.2.3 - Alternative support plans
- (4) 302.2.4 - Support plan updates
- (5) 302.2.5 - Risks
- (6) Review all subtasks
- (7) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,7

READ

DO CASE

```
CASE CHOICE=1
  DO T3221
CASE CHOICE=2
  DO T3222
CASE CHOICE=3
  DO T3223
CASE CHOICE=4
  DO T3224
CASE CHOICE=5
  DO T3225
CASE CHOICE=6
  DO T3221
  DO T3222
  DO T3223
  DO T3224
  DO T3225
CASE CHOICE=7
  RETURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*    T3221.PRG    *
*          *
*****
```

```
CLEAR
TEXT
```

Task 302.2.1 requires the contractor to develop and document viable alternative system level support concepts which satisfy the functional requirements of the new system/equipment within supportability and supportability related design constraints. Each alternative concept should be developed to a level commensurate with hardware, software, and operational concept development. Contractor logistic support (total, in part, or on an interim basis) should be considered in formulating alternative support concepts.

```
ENDTEXT
WAIT
```

```
*****
*          *
*    T3222.PRG    *
*          *
*****
```

```
CLEAR
TEXT
```

Task 302.2.2 requires the contractor to update alternative support concepts developed and documented under Task 302.2.1 as system tradeoffs

are conducted and new system/equipment alternatives become better defined.

ENDTEXT
WAIT

* *
* T3223.PRG *
* *

CLEAR
TEXT

Task 302.2.3 requires the contractor to develop and document viable alternative support plans to a level commensurate with hardware, software, and operational scenario development.

ENDTEXT
WAIT

* *
* T3224.PRG *
* *

CLEAR
TEXT

Task 302.2.4 requires the contractor to update alternative support plans developed under Task 302.2.3 as tradeoffs are conducted and new system/equipment's design and operational scenario become better defined.

ENDTEXT
WAIT

* *
* T3225.PRG *
* *

CLEAR
TEXT

Task 302.2.5 requires the contractor to identify risks associated with each support system alternative formulated.

ENDTEXT
WAIT

```
*****  
*          *  
*  T303.PRG  *  
*          *  
*****
```

*This is a subprogram to T300.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

TEXT

The purpose of Task 303 (Evaluation of Alternatives and Tradeoff Analysis) is to determine the preferred support system alternative(s) for each system/equipment alternative and to help determine the best approach (support, design, and operation) which satisfies the need with the best balance between cost, schedule, performance, readiness, and supportability. This tradeoff should be an inherent part of system development. This task helps ensure optimum benefits are realized from the new system/equipment through the consideration of all system factors (cost, schedule, performance, and supportability) before the system is finalized.

ENDTEXT

WAIT

CLEAR

CHOICE=0

TEXT

Which of the following subtasks would you like to review?

- (1) 303.2.1 - Tradeoff criteria
- (2) 303.2.2 - Support system tradeoffs
- (3) 303.2.3 - System tradeoffs
- (4) 303.2.4 - Readiness sensitivities
- (5) 303.2.5 - Manpower and personnel tradeoffs
- (6) 303.2.6 - Training tradeoffs
- (7) 303.2.7 - Repair level analysis
- (8) 303.2.8 - Diagnostic tradeoffs
- (9) 303.2.9 - Comparative evaluations
- (10) 303.2.10 - Energy tradeoffs
- (11) 303.2.11 - Survivability tradeoffs
- (12) 303.2.12 - Transportability tradeoffs
- (13) Review all subtasks
- (14) Return to the previous menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "99" RANGE 1,14

READ

DO CASE

CASE CHOICE=1

DO T3321

```
CASE CHOICE=2
  DO T3322
CASE CHOICE=3
  DO T3323
CASE CHOICE=4
  DO T3324
CASE CHOICE=5
  DO T3325
CASE CHOICE=6
  DO T3326
CASE CHOICE=7
  DO T3327
CASE CHOICE=8
  DO T3328
CASE CHOICE=9
  DO T3329
CASE CHOICE=10
  DO T33210
CASE CHOICE=11
  DO T33211
CASE CHOICE=12
  DO T33212
CASE CHOICE=13
  DO T3321
  DO T3322
  DO T3323
  DO T3324
  DO T3325
  DO T3326
  DO T3327
  DO T3328
  DO T3329
  DO T33210
  DO T33211
  DO T33212
CASE CHOICE=14
  RETURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*  T3321.PRG  *
*          *
*****
```

```
CLEAR
TEXT
```

Task 303.2.1 details work that shall be conducted by the contractor under the specific evaluations required in Tasks 303.2.2 thru 303.2.12. This task can be tailored as required for the evaluations required by the

government. Task 303.2.1 requires that each evaluation and tradeoff:

a. Identify qualitative and quantitative criteria which will be used to determine the best results. These criteria shall be related to the supportability, cost, and readiness requirements for the system/equipment

b. Select or construct analytical relationships or models between supportability, design, and operational parameters and those parameters identified for the evaluation criteria. In many cases, the same model or relationship may be appropriate to perform a number of evaluations and tradeoffs. Parametric and cost estimating relationships (PER/CER) may be appropriate for use in formulating analytical relationships

ENDTEXT

WAIT

CLEAR

TEXT

c. Conduct the tradeoff or evaluation using the established relationships and models and select the best alternative(s) based upon the established criteria

d. Conduct appropriate sensitivity analyses on those variables which have a high degree of risk involved or which drive supportability, cost, or readiness for the new system

e. Document the evaluation and tradeoffs as the system/equipment becomes better defined and more accurate data becomes available

f. Update the evaluations and tradeoffs as the system/equipment becomes better defined and more accurate data becomes available

g. Include both peacetime and wartime considerations in the analyses

ENDTEXT

WAIT

CLEAR

TEXT

h. Assess the impact on existing or planned weapon, supply, maintenance, and transportation systems based on the tradeoff decision

i. Assess life cycle support considerations to include post production support

ENDTEXT

WAIT

*
* T3322.PRG *
*

CLEAR

TEXT

Task 303.2.2 requires the contractor to conduct evaluations and tradeoffs between the support system alternatives identified for each system/equipment alternative (Task 302). For the selected support system alternative(s), identify and document any new or critical logistic support resource requirements. Any restructured personnel job classification should be identified by the contractor as a new resource.

ENDTEXT

WAIT

*
* T3323.PRG *
*

CLEAR

TEXT

Task 303.2.3 requires the contractor to conduct evaluations and tradeoffs between design, operations, and support concepts under consideration.

ENDTEXT

WAIT

*
* T3324.PRG *
*

CLEAR

TEXT

Task 303.2.4 requires the contractor to evaluate the sensitivity of system readiness parameters to variations in key design and support parameters such as R&M, spares budgets, resupply time, and manpower and personnel skill availability.

ENDTEXT

WAIT

*
* T3325.PRG *
*

CLEAR

TEXT

Task 303.2.5 requires the contractor to estimate and evaluate the manpower and personnel implications of alternative system/equipment concepts in terms of total numbers of personnel required, job classifications, skill levels, and experience required. This analysis should include organizational overhead requirements, error rates, and training requirements.

ENDTEXT

WAIT

*
* T3326.PRG *
*

CLEAR

TEXT

Task 303.2.6 requires the contractor to conduct evaluations and tradeoffs between design, operations, training, and personnel job design to determine the optimum solution for attaining and maintaining the required proficiency of operating and support personnel. Training evaluations and trades shall be conducted and shall consider shifting of job duties between job classifications, alternative technical publications concepts, and alternative mixes of formal training, on-the-job training, unit training, and use of training simulators.

ENDTEXT

WAIT

*
* T3327.PRG *
*

CLEAR

TEXT

Task 303.2.7 requires the contractor to conduct repair level analysis (RLA) commensurate with the level of design, operation, and support data available.

ENDTEXT

WAIT

* *
* T3328.PRG *
* *

CLEAR
TEXT

Task 303.2.8 requires the contractor to evaluate alternative diagnostic concepts to include varying degrees of built-in-test (BIT), off-line-test, manual testing, automatic testing, diagnostic connecting points for testing, and identify the optimum diagnostic concept for each system/equipment alternative under consideration.

ENDTEXT
WAIT

* *
* T3329.PRG *
* *

CLEAR
TEXT

Task 303.2.9 requires the contractor to conduct comparative evaluations between the supportability, cost, and readiness parameters of the new system/equipment and existing comparative systems/equipment. This task includes assessing the risk involved in achieving the supportability, cost, and readiness objectives for the new system/equipment based on the degree of growth over existing system/equipment.

ENDTEXT
WAIT

* *
* T33210.PRG *
* *

CLEAR
TEXT

Task 303.2.10 requires the contractor to conduct evaluations and tradeoffs between system/equipment alternatives and energy requirements. This task requires identification of petroleum, oil, and lubricant (POL) requirements for each system/equipment alternative under consideration and conduct sensitivity analyses on POL costs.

ENDTEXT
WAIT

* *
* T33211.PRG *
* *

CLEAR
TEXT
Task 303.2.11 requires the contractor to conduct evaluations and tradeoffs between system/equipment alternatives and survivability and battle damage repair characteristics in a combat environment.

ENDTEXT
WAIT

* *
* T33212.PRG *
* *

CLEAR
TEXT
Task 303.2.12 requires the contractor conduct evaluations and tradeoffs between system/equipment alternatives and transportability requirements. Included in this task is an identification of transportability requirements for each alternative under consideration and the limiting constraints, characteristics, and environments on each of the modes of transportation.

ENDTEXT
WAIT

*This is a subprogram to DESCRIBE.PRG to choose on the three tasks
*within the 400 Series LSA tasks

DO WHILE .T.
CHOICE=0
CLEAR
TEXT

400 Series Tasks - Determination of Logistic Support Resource Requirements

Which of the following 400 Series tasks would you like to review?

- (1) Task 401 - Task Analysis
- (2) Task 402 - Early Fielding Analysis
- (3) Task 403 - Post Production Support Analysis
- (4) Return to the previous menu

ENDTEXT
 @20,10 SAY 'What is your choice? ' GET CHOICE;
 PICTURE "9" RANGE 1,4

READ
 DO CASE
 CASE CHOICE=1
 DO T401
 CASE CHOICE=2
 DO T402
 CASE CHOICE=3
 DO T403
 CASE CHOICE=4
 RETURN
 ENDCASE
 LOOP
 ENDDO

 * *
 * T401.PRG *
 * *

*This is a subprogram to T400.PRG, a subprogram to DESCRIBE.PRG,
 *a subprogram to MAIN.PRG.

DO WHILE .T.
 CLEAR
 TEXT
 Task 401 (Task Analysis) provides the detailed identification of requirements for all elements of ILS to operate and support the new system/equipment. It also includes an analysis of requirements to identify areas where supportability enhancements can be achieved.
 The timing and depth for performance of Task 401 is governed by the level of design and operation definition and by the program shcedule. Demonstration and Validation Phase efforts should be limited to only essential information. During the FSD Phase, this task would be performed for all system/equipment components. During the Production Phase, this task would be performed on design changes.

ENDTEXT
 WAIT
 CLEAR
 CHOICE=0

TEXT

Which of the following subtasks would you like to review?

- (1) 401.2.1 - Task analysis
- (2) 401.2.2 - Analysis documentation
- (3) 401.2.3 - New/critical support resources
- (4) 401.2.4 - Training requirements and recommendations
- (5) 401.2.5 - Design improvements
- (6) 401.2.6 - Management plans
- (7) 401.2.7 - Transportability analysis
- (8) 401.2.8 - Provisioning requirements
- (9) 401.2.9 - Validation
- (10) 401.2.10 - ILS output products
- (11) 401.2.11 - LSAR updatas
- (12) Review all subtasks
- (13) Return to the previous menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "99" RANGE 1,13

READ

```
DO CASE
  CASE CHOICE=1
    DO T4121
  CASE CHOICE=2
    DO T4122
  CASE CHOICE=3
    DO T4123
  CASE CHOICE=4
    DO T4124
  CASE CHOICE=5
    DO T4125
  CASE CHOICE=6
    DO T4126
  CASE CHOICE=7
    DO T4127
  CASE CHOICE=8
    DO T4128
  CASE CHOICE=9
    DO T4129
  CASE CHOICE=10
    DO T41210
  CASE CHOICE=11
    DO T41211
  CASE CHOICE=12
    DO T4121
    DO T4122
    DO T4123
    DO T4124
    DO T4125
    DO T4126
    DO T4127
```

```
DO T4128
DO T4129
DO T41210
DO T41211
CASE CHOICE=13
RETURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*    T4121.PRG    *
*          *
*****
```

CLEAR
TEXT

Task 401.2.1 requires the contractor to conduct a detailed analysis of each operation and maintenance task requirement identified for the new system/equipment (Task 301) and determine the following:

- a. Procedural steps required to perform the task to include identification of those tasks that are duty position specific (performed principally by only one individual) or collective tasks (performed by two or more individuals as a team or crew).
- b. Logistic support resources required (considering all ILS elements) to perform the task.
- c. Task frequency, task interval, elapsed time, and manhours in the system/equipment's intended operational environment and based on the specified annual operating base.
- d. Maintenance level assignment based on the established support plan (Task 303).

ENDTEXT
WAIT

```
*****
*          *
*    T4122.PRG    *
*          *
*****
```

CLEAR
TEXT

Task 401.2.2 requires the contractor to document the results of the detailed task analysis (Task 401.2.1) in the LSAR, or equivalent format approved by the government.

ENDTEXT
WAIT

* *
* T4123.PRG *
* *

CLEAR
TEXT

Task 401.2.3 requires the contractor to identify those logistic support resources required to perform each task which are new or critical. New resources are those which require development to operate or maintain the new system/equipment. These can include support and test equipment, facilities, new or restructured personnel skills, training devices, new or special transportation systems, new computer resources, and new repair, test, or inspection techniques or procedures to support new design plans or technology. Critical resources are those which are not new but require special management attention due to schedule constraints, cost implications, or known scarcities. Unless otherwise required, the contractor should document new and modified logistic support resources in the LSAR, or equivalent documentation approved by the government, to provide a description and justification for the resource requirement.

ENDTEXT
WAIT

* *
* T4124.PRG *
* *

CLEAR
TEXT

Task 401.2.4 requires the contractor to identify training requirements based upon the identified task procedures and personnel assignments. The contractor is tasked to provide recommendations concerning the best mode of training (formal classroom, on-the-job, or both) and the rational for recommendations. Results are documented by the contractor in the LSAR or an equivalent format approved by the government.

ENDTEXT
WAIT

* *
* T4125.PRG *
* *

CLEAR

TEXT

Task 401.2.5 requires the contractor to analyze the total logistic support resource requirements for each task and determine which tasks fail to meet established supportability or supportability related design goals or constraints for the new system/equipment. The contractor is tasked to identify tasks which can be optimized or simplified to reduce O&S costs, optimize logistic support sreource requirements, or enhance readiness. The contractor should propose alternative designs and participate in the development of alternative approaches to optimize and simplify tasks or to bring task requirements within acceptable levels.

ENDTEXT

WAIT

* *
* T4126.PRG *
* *

CLEAR

TEXT

Task 401.2.6 requires that the contractor determine what management actions can be taken to minimize risks associated with each new or critical resource based upon the identified new or critical logistic support resources. These actions could include development of detailed tracking procedures, or schedule and budget modifications.

ENDTEXT

WAIT

* *
* T4127.PRG *
* *

CLEAR

TEXT

Task 401.2.7 requires the contractor to conduct a transportability analysis on the system/equipment and any sections thereof when sectionalization is required for transport. When the general requirements of MIL-STD-1366 limitations are exceeded, the contractor must document the transportability engineering characteristics in the

LSAR, or equivalent format approved by the government. The contractor is tasked to participate in the development of design alternatives when transportability problem areas are surfaced.

ENDTEXT
WAIT

* *
* T4128.PRG *
* *

CLEAR
TEXT

Task 401.2.8 requires the contractor to document the provisioning technical documentation in the LSAR, or equivalent format approved by the government, for those support resources requiring initial provisioning.

ENDTEXT
WAIT

* *
* T4129.PRG *
* *

CLEAR
TEXT

Task 401.2.9 tasks the contractor to validate the key information documented in the LSAR through performance of operations and maintenance tasks on prototype equipment. This validation is conducted using the procedures and resources identified during the performance of the detailed task analysis (Task 401.2.1) and updates must be made by the contractor when required. Validation requirements must be coordinated with other system engineering demonstrations and tests by the contractor (e.g., maintainability demonstrations, reliability and durability tests) to optimize validation time and requirements.

ENDTEXT
WAIT

* *
* T41210.PRG *
* *

CLEAR

TEXT

Task 401.2.10 tasks the contractor to prepare output summaries and reports to satisfy ILS documentation requirements as specified by the government. This includes all pertinent data contained in the LSAR at the time of preparation of summaries and reports.

ENDTEXT

WAIT

* *
* T41211.PRG *
* *

CLEAR

TEXT

Task 401.2.11 tasks the contractor to update the data in the LSAR as better information becomes available and as applicable input data from other system engineering programs is updated.

ENDTEXT

WAIT

* *
* T402.PRG *
* *

*This is a subprogram to T400.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG.

DO WHILE .T.

CLEAR

CHOICE=0

TEXT

Task 402 (Early Fielding Analysis) is designed to assure an effective fielding of the new system/equipment with all required resources.

Which of the following subtasks would you like to review?

- (1) 402.2.1 - New system impact
- (2) 402.2.2 - Sources of manpower and personnel skills
- (3) 402.2.3 - Impact of resource shortfalls
- (4) 402.2.4 - Combat resource requirements
- (5) 402.2.5 - Plans for problem resolution
- (6) Review all subtasks
- (7) Return to the previous menu

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,7
READ
DO CASE
  CASE CHOICE=1
    DO T4221
  CASE CHOICE=2
    DO T4222
  CASE CHOICE=3
    DO T4223
  CASE CHOICE=4
    DO T4224
  CASE CHOICE=5
    DO T4225
  CASE CHOICE=6
    DO T4221
    DO T4222
    DO T4223
    DO T4224
    DO T4225
  CASE CHOICE=7
    RETURN
ENDCASE
LOOP
ENDDO
```

```
*****  
*          *  
*  T4221.PRG  *  
*          *  
*****
```

```
CLEAR
TEXT
Task 402.2.1 tasks the contractor to assess the impact on existing
systems (weapon, supply, maintenance, transportation) from introduction
of the new system/equipment. This assessment shall examine impacts on
depot workload and scheduling, provisioning and inventory factors,
automatic test equipment availability and capability, manpower and
personnel factors, training programs and requirements, POL requirements,
and transportation systems, and shall identify any changes required to
support existing weapon systems due to new system/equipment requirements.
```

```
ENDTEXT
WAIT
```

* *
* T4222.PRG *
* *

CLEAR

TEXT

Task 402.2.2 tasks the contractor to analyze existing manpower and personnel sources to determine sources to obtain the required manpower and personnel for the new system/equipment. The contractor must determine the impact on existing operational systems from using the identified sources for manpower and personnel.

ENDTEXT

WAIT

* *
* T4223.PRG *
* *

CLEAR

TEXT

Task 402.2.3 tasks the contractor to assess the impact on system/equipment readiness resulting from failure to obtain the required logistic support resources in the quantities required. This task should not duplicate analyses performed under Task 303.

ENDTEXT

WAIT

* *
* T4224.PRG *
* *

CLEAR

TEXT

Task 402.2.4 tasks the contractor to conduct survivability analyses to determine changes in logistic support resource requirements based on combat usage. These analyses shall be based on threat assessments, projected combat scenarios, system/equipment vulnerability, battle damage repair capabilities, and component essentialities in combat. The contractor is tasked to identify and document recommended combat logistic support resources (e.g., combat supply support stockage lists) and sources to satisfy the requirements. This task should not duplicate analyses performed under Task 303.

ENDTEXT
WAIT

* *
* T4225.PRG *
* *

CLEAR
TEXT

Task 402.2.5 tasks the contractor to develop plans to implement solutions to problems surfaced in early fielding analysis tasks 401.2.1 thru 401.2.4.

ENDTEXT
WAIT

* *
* T403.PRG *
* *

*This is a subprogram to T400.PRG, a subprogram to DESCRIBE.PRG,
*a subprogram to MAIN.PRG. There is only one subtask to Task 403.

CLEAR
TEXT

The purpose of Task 403 (Post Production Support Analysis) is to analyze life cycle support requirements of the new system/equipment prior to closing of production lines to assure that adequate logistic support resources will be available during the system/equipment's remaining life.

Subtask 403.2 is the only subtask to Task 403 levied on a contractor. It tasks the contractor to assess the expected life of the system/equipment. The contractor must identify support items associated with the system/equipment that will present potential problems due to inadequate sources of supply after shutdown of production lines. The contractor must develop and analyze alternative solutions for anticipated support difficulties during the remaining life of the system/equipment. The contractor is further tasked to develop a plan that assures effective support during its remaining life along with the estimated funding requirements to implement the plan. As a minimum, this plan will address manufacturing, repair centers, data modifications, supply management, and configuration management.

ENDTEXT
WAIT

```
*****  
*  
* T500.PRG  
*  
*****
```

*This is a subprogram to DESCRIBE.PRG to review Task 501 subtasks

DO WHILE .T.

CHOICE=0

CLEAR

TEXT

500 Series Task - Supportability Assessment

Task 501 is the only task under the 500 Series tasks. The purpose of Task 501 is to assess achievement of specified supportability requirements, identify reasons for deviations from projections, and identify methods of correcting deficiencies and enhancing system readiness.

Which of the following subtasks would you like to review?

- (1) 501.2.1 - Test and evaluation strategy
- (2) 501.2.2 - Objectives and criteria
- (3) 501.2.3 - Updates and corrective actions
- (4) 501.2.4 - Supportability assessment plan (post deployment)
- (5) 501.2.5 - Supportability assessment (post deployment)
- (6) Review all subtasks
- (7) Return to the previous menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;

PICTURE "9" RANGE 1,7

READ

DO CASE

CASE CHOICE=1

DO T5121

CASE CHOICE=2

DO T5122

CASE CHOICE=3

DO T5123

CASE CHOICE=4

DO T5124

CASE CHOICE=5

DO T5125

CASE CHOICE=6

DO T5121

DO T5122

DO T5123

DO T5124

DO T5125

```
CASE CHOICE=7
  RETURN
ENDCASE
LOOP
ENDDO
```

```
*****
*          *
*  T5121.PRG  *
*          *
*****
```

CLEAR

TEXT

Task 501.2.1 tasks the contractor to formulate a test and evaluation strategy to assure that specified supportability and supportability related design requirements are achieved, or achievable, for input into system test and evaluation plans. The test and evaluation strategy formulated by the contractor shall be based upon quantified supportability requirements for the new system/equipment; the supportability, cost, and readiness drivers; and supportability issues with a high degree of risk associated with them. Tradeoffs shall be conducted by the contractor under this task between the planned test length and cost and the statistical risks incurred. Potential test program limitations in verifying supportability objectives based on previous test and evaluation experience and the resulting effect on the accuracy of the supportability assessment shall be documented.

NOTE: The government should ensure that the contractor incorporates test and evaluation strategies for supportability into test plans.

ENDTEXT

WAIT

```
*****
*          *
*  T5122.PRG  *
*          *
*****
```

CLEAR

TEXT

Task 501.2.2 tasks the contractor to establish and document test and evaluation program objectives and criteria and to identify test resources, procedures, and schedules required to meet the objectives for inclusion in the coordinated test program and test and evaluation plans. The objective and criteria established shall provide the basis for assuring that critical supportability issues and requirements have been resolved or achieved within acceptable confidence levels.

ENDTEXT
WAIT

* *
* T5123.PRG *
* *

CLEAR
TEXT

Task 501.2.3 tasks the contractor to analyze the test results and verify/assess the achievement of specified supportability requirements for the new system/equipment. The contractor must determine the extent of improvement required in supportability and supportability related design parameters to meet established goals and thresholds for the system/equipment. The contractor must identify any areas where established goals or thresholds have not been demonstrated within acceptable confidence levels. This task shouldn't duplicate work done under Task 303. The contractor must develop corrections for supportability problems uncovered during test and evaluation. These could include modifications to hardware, software, support plans, logistic support resources, or operational tactics. The contractor must update the documented support plan and logistic support resource requirements as contained in the LSAR and LSAR output reports based on the test results. Lastly, the contractor must quantify the effects of these updates on the projected cost, readiness, and logistic support resources parameters for the new system/equipment.

ENDTEXT
WAIT

* *
* T5124.PRG *
* *

CLEAR
TEXT

Task 501.2.4 tasks the contractor to analyze standard reporting systems to determine the amount and accuracy of supportability information that will be obtained on the new system/equipment in its operational environment. The contractor is tasked to identify any shortfalls in measuring accomplishment against the supportability goals that were established for the new system/equipment, or in verifying supportability factors which were not tested during the acquisition phases of the item's life cycle. Plans must be developed for obtaining required supportability data from the field which will not be obtained through standard reporting systems. The contractor must also conduct tradeoff analyses between cost, length of data collection, number of operational

units in which to collect data, and statistical accuracy to identify the best data collection plan. The contractor is tasked to document the data collection plan selected to include details concerning cost, duration, method of data collection, operational units, predicted accuracy, and intended use of the data.

ENDTEXT

WAIT

```
*****  
*          *  
*  T5125.PRG  *  
*          *  
*****
```

CLEAR

TEXT

Task 501.2.5 tasks the contractor to analyze supportability data as it becomes available from standard supply, maintenance, and readiness reporting systems and from any special data collection programs implemented on the new system/equipment. The contractor must verify achievement of the goals and thresholds established for the new system/equipment. In those cases where operational results deviate from projections, determine causes and corrective actions. The contractor must analyze feedback information and identify areas where improvements can be cost effectively accomplished, and document recommended improvements.

ENDTEXT

WAIT

Appendix C

Biographies

John S. Yaniec

Mr Yaniec is a Logistics Management Specialist for the Air Force Acquisition Logistics Center (AFALC). His primary duties are providing LSA expertise to the Deputies for Reconnaissance/Strike Electronic Warfare Systems and F-16 System. Prior to this position, Mr Yaniec assisted in the development, coordination, and maintenance of the currency of joint service military standards on LSA within AFALC. He has worked in the lessons learned area within AFALC, was a branch supervisor for Air Force Engineering and Technical Services (AFETS) in the 47th Communication Group, and performed maintenance duties on the Digital Subscriber Terminal Equipment (DSTE) at the 2031st Communications Squadron and at Joliet Army Ammunition Plant. He has 18 years of federal service and holds a Bachelor of Science degree in Industrial Management from Lawrence Institute of Technology.

Ronald Potter

Mr Potter is the Aeronautical Systems Division Focal Point for Logistics Support Analysis. Prior to this position he provided LSA expertise to the SDI, Peace Pearl, YA-7F Upgrade, MILSTAR, EW-ARC, VISTA, IRST, SRAM II, Space Transportation System, E-3 ICON/ESM, and CW/NBCD programs. He was the Air Force Logistics Command focal point for Joint Logistics Command CBR Defense Equipment. He was the AFLC focal point for the Force Readiness Report on Support Equipment to Congress for the Air National Guard and Air Reserve Forces. He has attended Air Command and Staff College, the Defense Systems Management College's Technical Management Course, and the Army Material Readiness Support Activity (MRS) 2 week LSA course. Mr Potter is completing a Bachelor of Science degree in Logistics Management from Park College. He has 12 years of federal service.

Captain Richard A. Andrews

Capt Andrews is an Assistant Professor of Acquisition Logistics Management at the School of Systems and Logistics, Air Force Institute of Technology (AFIT). He instructs a 2 week course on Acquisition Logistics which contains heavy emphasis on the logistic support analysis (LSA) process. He is considered the AFIT expert on LSA. He was a Logistics Plans and Programs Officer for the Peacekeeper Missile System at Hill AFB, and Integrated Logistics Support Manager for the HH-60D "Night Hawk" and UH-60A "Black Hawk" Programs at Aeronautical Systems Division. Capt Andrews has 11 years of enlisted experience in aircraft maintenance as an instructor and supervisor, and 3 years experience instructing professional military education. He holds a Bachelor of Science Degree in Social Science from Black Hills State College and a Master of Arts in Logistics Management from Central Michigan University. Capt Andrews has been recognized by the Society of Logistics Engineers as a Certified Profession Logistician (CPL).

Appendix D

FEEDBACK QUESTIONNAIRE FOR LSA EXPERTS
INVOLVED IN THE LSA DSS PROGRAM

1. How useful do you think the LSA DSS program will be to logistics managers compared to their using Mil-Std-1388-1A alone or with other available LSA literature?

- a. Extremely useful
- b. Very useful
- c. A little more useful
- d. As useful
- e. Less useful
- f. Much less useful
- g. Not useful at all

2. What improvements do you recommend be made to the program?

3. Would you recommend that the LSA DSS program be made generally available to system program offices (SPO's)?

- a. Strongly agree
- b. Agree
- c. Unsure
- d. Disagree
- e. Strongly disagree

4. Are you familiar with either the Logistics Planning and Requirements Simplification System (LOGPARS) or Computer Aided Tailoring Software Program (CATSOP) expert systems currently under development?

- a. Yes
- b. No
- c. Unsure

5. If you answered yes to question four, do you think that one of these programs will make the LSA DSS program of little benefit to SPO's?

- a. Strongly agree
- b. Agree
- c. Unsure
- d. Disagree
- e. Strongly disagree

6. Do you agree that capturing more historical knowledge in applying LSA to contractual efforts would be beneficial and should be pursued?

- a. Strongly agree
- b. Agree
- c. Unsure
- d. Disagree
- e. Strongly disagree

7. How do you recommend more corporate knowledge be gathered to improve the LSA DSS program?

- a. Working group meetings of LSA experts
- b. Surveying LSA experts and logisticians responsible for LSA management
- c. Through the use of the LSA DSS program; AFALC must encourage individuals to provide lessons learned in applying LSA from their acquisition efforts to improve the program
- d. Combination of the above (please specify)
- e. Other (please specify below)
- f. Unnecessary to capture more corporate knowledge; current guidance is sufficient

Appendix E

Applicability Matrix Output Reports

APPLICABILITY MATRIX OUTPUT
CONCEPTUAL PHASE PROGRAM

Task No.	Task	Comments
101	LSA STRATEGY	Done just prior to initiation of phase. Selectively applicable for equipment level acquisitions.
101.2.1	Strategy	
101.2.2	Updates	
102	LSA PLAN	Selectively applicable for equipment level acquisitions.
102.2.1	Plan	
102.2.2	Updates	
103	REVIEWS	
103.2.1	Procedures	Mil-Std-1388-1A not the primary implementing document for documenting program and design review procedures. See SOW req't for these reviews. Selectively applicable for equipment level acquisitions
103.2.2	Design Reviews	Mil-Std-1388-1A not the primary implementing document. See Mil-Std-1521A and SOW req't for technical reviews.
103.2.3	Program Reviews	Selectively applicable to equipment level acquisitions Mil-Std-1388-1A not the primary implementing document. See SOW tasking for Program Reviews.
103.2.4	LSA Prog Review	Selectively applicable for equipment level acquisitions.
201	USE STUDY	Selectively applicable for equipment level acquisitions.
201.2.1	Support Factors	

APPLICABILITY MATRIX OUTPUT
CONCEPTUAL PHASE PROGRAM

Task No.	Task	Comments
201.2.2	Quant. Factors	
201.2.3	Field Visits	
201.2.4	Report & Update	
202	STANDARDIZATION	Mil-Std-1388-1a not the primary implementing document. Other standards, such as Mil-Std-965, and SOW taskings provide specific standardization procedures and requirements to the contractor.
		Selectively applicable for equipment level acquisitions.
202.2.1	Constraints	
202.2.2	Characteristics	
202.2.3	Approaches	
202.2.4	Risks	
203	COMPARATIVE ANALYSIS	
203.2.1	Ident. Comp. Systems	
203.2.2	Baseline Comp. Syst.	
203.2.3	Comparative Charact.	
203.2.4	Qualitative Problems	
203.2.5	Drivers	
203.2.6	Unique Drivers	
203.2.7	Updates	
203.2.8	Risks & Assumptions	
204	TECH. OPPORTUNITIES	
204.2.1	Design Objectives	
204.2.2	Updates	
204.2.3	Risks	
205	SUPP'T DESIGN FACTOR	
205.2.1	Supp't Characterist.	
205.2.2	Objectives & Risks	
205.2.3	Spec Requirements	
205.2.4	NATO Constraints	
301	FUNCT'L REQ'TS IDENT	Selectively applicable for equipment level acquisitions.
301.2.1	Functional Req'ts	
301.2.3	Risks	
301.2.4	Ops & Mx Tasks	Selectively applicable.
301.2.4.1	FMECA	
301.2.4.2	Reliab. Center Mx	

APPLICABILITY MATRIX OUTPUT
CONCEPTUAL PHASE PROGRAM

Task No.	Task	Comments
301.2.4.3	Other Tasks	
301.2.5	Design Alternatives	
301.2.6	Updates	
302	SUPP'T SYS ALTERNAT	
302.2.1	Alt. Supp't Concepts	Selectively applicable for
302.2.2	Updates	Selectively applicable.
302.2.3	Alt. Supp't Plans	Selectively applicable.
302.2.4	Plan Updates	Selectively applicable.
302.2.5	Risks	
303	ALT. & TRADEOFFS	
303.2.2	Support Sys. Trades	
303.2.3	System Tradeoffs	
303.2.4	Readiness Sensitivit	
303.2.5	Manpower Tradeoffs	
303.2.6	Training Tradeoffs	
303.2.7	Repair Level Analys.	Selectively applicable.
303.2.8	Diagnostic Tradeoffs	
303.2.9	Comparative Eval's	Requires considerable interpretation of intent to be cost effective.
303.2.10	Energy Tradeoffs	
303.2.11	Survivability Trades	
303.2.12	Transport'y Trades	
401	TASK ANALYSIS	Not applicable for equipment level acquisitions.
402	EARLY FIELDING ANAL.	Not applicable for equipment level acquisitions.
403	POST PROD SUP'T ANAL	Not applicable for equipment level acquisitions.
501	SUPP'T'Y T&E & VERIF	Not applicable for equipment level acquisitions.
501.2.1	T&E Strategy	Not applicable.

APPLICABILITY MATRIX OUTPUT
DEMONSTRATION/VALIDATION PHASE PROGRAM

Task No.	Task	Comments
101	LSA STRATEGY	Done just prior to initiation of the phase.
101.2.1	Strategy	Selectively applicable for equipment level acquisitions.
101.2.2	Updates	
102	LSA PLAN	Selectively applicable for equipment level acquisitions.
102.2.1	Plan	
102.2.2	Updates	
103	REVIEWS	
103.2.1	Procedures	Mil-Std-1388-1A not the primary implementation document for documenting program and design review procedures. See SOW req't for these reviews.
103.2.2	Design Reviews	Selectively applicable to equipment level acquisitions
103.2.3	Program Reviews	Mil-Std-1388-1A not the primary implementing document. See Mil-Std-1521A and SOW req't for technical reviews
103.2.4	LSA Prog Review	Selectively applicable to equipment level acquisitions
201	USE STUDY	Mil-Std-1388-1A not the primary implementing document. See SOW tasking for Program Reviews.
201.2.1	Support Factors	Selectively applicable for equipment level acquisitions.
201.2.2	Quant. Factors	
201.2.3	Field Visits	
201.2.4	Report & Update	
202	STANDARDIZATION	Mil-Std-1388-1A not the primary implementing document. Other standards, such as Mil-Std-965,

APPLICABILITY MATRIX OUTPUT
DEMONSTRATION/VALIDATION PHASE PROGRAM

Task No.	Task	Comments
	and requirements to the	
202.2.1	Constraints	
202.2.2	Characteristics	and other SOW taskings provide specific standardization procedures
202.2.3	Approaches	
202.2.4	Risks	contractor.
203	COMPARATIVE ANALYSIS	
203.2.1	Ident. Comp. Systems	Selectively applicable for equipment level acquisitions.
203.2.2	Baseline Comp. Syst.	
203.2.3	Comparative Charact.	
203.2.4	Qualitative Problems	Selectively applicable for equipment level acquisitions.
203.2.5	Drivers	Selectively applicable for equipment level acquisitions.
203.2.6	Unique Drivers	Selectively applicable for equipment level acquisitions.
203.2.7	Updates	
203.2.8	Risks & Assumptions	
204	TECH. OPPORTUNITIES	
204.2.1	Design Objectives	
204.2.2	Updates	
204.2.3	Risks	
205	SUPP'T DESIGN FACTOR	
205.2.1	Supp't Characterist.	
205.2.2	Objectives & Risks	
205.2.3	Spec Requirements	
205.2.4	NATO Constraints	Selectively applicable for equipment level acquisitions.
205.2.5	Goals & Thresholds	
301	FUNCT'L REQ'TS IDENT	
301.2.1	Functional Req'ts	
301.2.3	Risks	
301.2.4	Ops & Mx Tasks	
301.2.4.1	FMECA	
301.2.4.2	Reliab. Center Mx	
301.2.4.3	Other Tasks	

APPLICABILITY MATRIX OUTPUT
DEMONSTRATION/VALIDATION PHASE PROGRAM

Task No.	Task	Comments
301.2.5	Design Alternatives	
301.2.6	Updates	
302	SUPP'T SYS ALTERNAT	
302.2.1	Alt. Supp't Concepts	Selectively applicable for equipment level acquisitions.
302.2.3	Alt. Supp't Plans	Selectively applicable.
302.2.4	Plan Updates	Selectively applicable.
302.2.5	Risks	
303	ALT. & TRADEOFFS	
303.2.1	Tradeoff Criteria	
303.2.2	Support Sys. Trades	
303.2.3	System Tradeoffs	
303.2.4	Readiness Sensitiv	
303.2.5	Manpower Tradeoffs	
303.2.6	Training Tradeoffs	
303.2.7	Repair Level Analys.	
303.2.8	Diagnostic Tradeoffs	
303.2.9	Comparative Eval's	Selectively applicable for equipment level acquisitions.
303.2.10	Energy Tradeoffs	Selectively applicable for equipment level acquisitions.
303.2.11	Survivability Trades	Selectively applicable for equipment level acquisitions.
303.2.12	Transport'y Trades	Selectively applicable for equipment level acquisitions.
401	TASK ANALYSIS	Selectively applicable.
401.2.1	Task Analysis	
401.2.2	Analysis Document.	
401.2.3	New/Crit Supp't Res.	
401.2.4	Training Req'ts	
401.2.5	Desing Improvements	
401.2.6	Management Plan	
401.2.7	Transport'y Analysis	Generally applicable.
401.2.8	Provisioning Req'ts	Selectively applicable for equipment level acquisitions.
401.2.9	Validation	
401.2.10	ILS Output Products	
401.2.11	LSAR Updates	
402	EARLY FIELDING ANAL.	Not applicable.
403	POST PROD SUP'T ANAL	Not applicable.
501	SUPP'T'Y T&E & VERIF	
501.2.1	T&E Strategy	
501.2.2	Objectv's & Criteria	Selectively applicable for equipment level acquisitions.

APPLICABILITY MATRIX OUTPUT
DEMONSTRATION/VALIDATION PHASE PROGRAM

Task No.	Task	Comments
501.2.3	Updates & Corr. Act.	Selectively applicable for equipment level acquisitions.

APPLICABILITY MATRIX OUTPUT
FSD PHASE PROGRAM

Task No.	Task	Comments
101	LSA STRATEGY	Selectively applicable.
101.2.1	Strategy	Done just prior to initiation of the phase.
101.2.2	Updates	
102	LSA PLAN	Selectively applicable for equipment level acquisitions.
102.2.1	Plan	
102.2.2	Updates	
103	REVIEWS	
103.2.1	Procedures	Mil-Std-1388-1A not the primary implementation document for documenting program and design review procedures. See SOW req't for these reviews.
103.2.2	Design Reviews	Selectively applicable to equipment level acquisitions
103.2.3	Program Reviews	Mil-Std-1388-1A not the primary implementing document. See Mil-Std-1521A and SOW req't for technical reviews.
103.2.4	LSA Prog Review	Selectively applicable to equipment level acquisitions
201	USE STUDY	Mil-Std-1388-1A not the primary implementing document.
201.2.1	Support Factors	Selectively applicable for equipment level acquisitions.
201.2.2	Quant. Factors	
201.2.3	Field Visits	
201.2.4	Report & Update	
202	STANDARDIZATION	Mil-Std-1388-1A not the primary implementing document. Other standards, such as Mil-Std-965, and other SOW taskings provide specific standardization procedures

APPLICABILITY MATRIX OUTPUT
FSD PHASE PROGRAM

Task No.	Task	Comments
202.2.1	Constraints	and requirements to the contractor.
202.2.2	Characteristics	Selectively applicable for equipment level acquisitions.
202.2.3	Approaches	
202.2.4	Risks	
203	COMPARATIVE ANALYSIS	
203.2.2	Baseline Comp. Syst.	Selectively applicable for equipment level acquisitions.
203.2.4	Qualitative Problems	Selectively applicable for equipment level acquisitions.
203.2.5	Drivers	Selectively applicable for equipment level acquisitions.
203.2.7	Updates	Selectively applicable for equipment level acquisitions.
203.2.8	Risks & Assumptions	
204	TECH. OPPORTUNITIES	Selectively applicable.
204.2.1	Design Objectives	
204.2.2	Updates	
204.2.3	Risks	
205	SUPP'T DESIGN FACTOR	
205.2.3	Spec Requirements	
301	FUNCT'L REQ'TS IDENT	Selectively applicable.
301.2.1	Functional Req'ts	
301.2.3	Risks	Requires considerable interpretation of intent to be cost effective. Selectively applicable.
301.2.4	Ops & Mx Tasks	Requires considerable interpretation of intent to be cost effective.
301.2.4.1	FMECA	
301.2.4.2	Reliab. Center Mx	
301.2.4.3	Other Tasks	
301.2.5	Design Alternatives	
301.2.6	Updates	
302	SUPP'T SYS ALTERNAT	
302.2.2	Updates	Selectively applicable.
302.2.3	Alt. Supp't Plans	Selectively applicable for

APPLICABILITY MATRIX OUTPUT
FSD PHASE PROGRAM

Task No.	Task	Comments
302.2.4	Plan Updates	equipment level acquisitions.
302.2.5	Risks	
303	ALT. & TRADEOFFS	
303.2.1	Tradeoff Criteria	
303.2.3	System Tradeoffs	
303.2.4	Readiness Sensitiv	
303.2.5	Manpower Tradeoffs	Selectively applicable.
303.2.6	Training Tradeoffs	
303.2.7	Repair Level Analys.	Selectively applicable.
303.2.8	Diagnostic Tradeoffs	
303.2.9	Comparative Eval's	Requires considerable interpretation of intent to be cost effective. Selectively applicable.
303.2.10	Energy Tradeoffs	
303.2.11	Survivability Trades	Selectively applicable. Selectively applicable for equipment level acquisitions.
401	TASK ANALYSIS	
401.2.1	Task Analysis	Selectively applicable for equipment level acquisitions.
401.2.2	Analysis Document.	
401.2.3	New/Crit Supp't Res.	Selectively applicable for equipment level acquisitions.
401.2.4	Training Req'ts	Selectively applicable for equipment level acquisitions.
401.2.5	Desing Improvements	
401.2.6	Management Plan	
401.2.7	Transport'y Analysis	
401.2.8	Provisioning Req'ts	Requires considerable interpretation of intent to be cost effective.
401.2.9	Validation	
401.2.10	ILS Output Products	Selectively applicable for equipment level acquisitions.
401.2.11	LSAR Updates	
402	EARLY FIELDING ANAL.	
402.2.1	New System Impact	
402.2.2	Sources of Manpower	
402.2.3	Impact of Shortfalls	
402.2.4	Combat Resource Rqts	
402.2.5	Problem Resolut. Pln	

APPLICABILITY MATRIX OUTPUT
FSD PHASE PROGRAM

Task No.	Task	Comments
403	POST PROD SUP'T ANAL	Not applicable.
501	SUPP'T'Y T&E & VERIF	Selectively applicable.
501.2.1	T&E Strategy	Selectively applicable for equipment level acquisitions.
501.2.2	Objectv's & Criteria	Selectively applicable for equipment level acquisitions.
501.2.3	Updates & Corr. Act.	Selectively applicable for equipment level acquisitions.
501.2.4	Supp't'y Assess. Pln	Selectively applicable for equipment level acquisitions.

APPLICABILITY MATRIX OUTPUT
PRODUCTION PHASE PROGRAM

Task No.	Task	Comments
101	LSA STRATEGY	Not applicable.
102	LSA PLAN	Selectively applicable for equipment level acquisitions.
102.2.1	Plan	
102.2.2	Updates	
103	REVIEWS	
103.2.1	Procedures	Mil-Std-1388-1A not the primary implementation document for documenting program and design review procedures. See SOW req't for these reviews.
103.2.2	Design Reviews	Selectively applicable to equipment level acquisitions Mil-Std-1388-1A not the primary implementing document. See Mil-Std-1521A and SOW req't for technical reviews.
103.2.3	Program Reviews	Selectively applicable to equipment level acquisitions Mil-Std-1388-1A not the primary implementing document.
103.2.4	LSA Prog Review	Selectively applicable for equipment level acquisitions.
201	USE STUDY	Not applicable.
202	STANDARDIZATION	Generally applicable to design changes only.
		Mil-Std-1388-1A not the primary implementing document. Other standards, such as Mil-Std-965, and SOW taskings provide specific standardization procedures and requirements to the contractor.
202.2.1	Constraints	Selectively applicable for equipment level acquisitions.
202.2.2	Characteristics	
202.2.3	Approaches	
202.2.4	Risks	

APPLICABILITY MATRIX OUTPUT
PRODUCTION PHASE PROGRAM

Task No.	Task	Comments
203	COMPARATIVE ANALYSIS	Not applicable.
204	TECH. OPPORTUNITIES	Not applicable.
205	SUPP'T DESIGN FACTOR	Generally applicable to design changes only.
205.2.3	Spec Requirements	Generally applicable to design changes only.
301	FUNCT'L REQ'TS IDENT	Generally applicable to design changes only.
301.2.1	Functional Req'ts	Requires considerable interpretation of intent to be cost effective.
301.2.3	Risks	Requires considerable interpretation of intent to be cost effective.
301.2.4	Ops & Mx Tasks	
301.2.4.1	FMECA	
301.2.4.2	Reliab. Center Mx	
301.2.4.3	Other Tasks	
301.2.5	Design Alternatives	
301.2.6	Updates	
302	SUPP'T SYS ALTERNAT	Generally applicable to design changes only.
302.2.3	Alt. Supp't Plans	Requires considerable interpretation of intent to be cost effective.
302.2.4	Plan Updates	Selectively applicable for equipment level acquisitions.
302.2.5	Risks	
303	ALT. & TRADEOFFS	Generally applicable to design changes only.
303.2.1	Tradeoff Criteria	
303.2.2	Support Sys. Trades	Selectively applicable for equipment level acquisitions.
303.2.3	System Tradeoffs	Selectively applicable for equipment level acquisitions.
303.2.6	Training Tradeoffs	Selectively applicable for equipment level acquisitions.
303.2.7	Repair Level Analys.	Selectively applicable for equipment level acquisitions.
303.2.9	Comparative Eval's	Selectively applicable for equipment level acquisitions.
303.2.10	Energy Tradeoffs	Selectively applicable for equipment level acquisitions.
303.2.11	Survivability Trades	Selectively applicable for equipment level acquisitions.
401	TASK ANALYSIS	Generally applicable to design changes only.
401.2.1	Task Analysis	
401.2.2	Analysis Document.	

APPLICABILITY MATRIX OUTPUT
PRODUCTION PHASE PROGRAM

Task No.	Task	Comments
401.2.3	New/Crit Supp't Res.	Selectively applicable for equipment level acquisitions.
401.2.4	Training Req'ts	Selectively applicable for equipment level acquisitions.
401.2.5	Desing Improvements	
401.2.6	Management Plan	
401.2.7	Transport'y Analysis	Requires considerable interpretation of intent to be cost effective.
401.2.8	Provisioning Req'ts	
401.2.9	Validation	
401.2.10	ILS Output Products	Selectively applicable for equipment level acquisitions.
401.2.11	LSAR Updates	
402	EARLY FIELDING ANAL.	Generally applicable to design changes only.
402.2.1	New System Impact	
402.2.2	Sources of Manpower	
402.2.3	Impact of Shortfalls	
402.2.4	Combat Resource Rqts	
402.2.5	Problem Resolut. Pln	
403	POST PROD SUP'T ANAL	
403.2	Post Prod Sup't Plan	
501	SUPP'T'Y T&E & VERIF	Selectively applicable.
501.2.2	Objectv's & Criteria	Selectively applicable.
501.2.3	Updates & Corr. Act.	Selectively applicable.
501.2.4	Supp't'y Assess. Pln	Selectively applicable for equipment level acquisitions.
501.2.5	Supp't'y Assessment	

Appendix F

Tailored Tasks and Subtasks: FSD Phase Program

Task No.	Task	Comments
101	LSA STRATEGY	Selectively applicable.
102	LSA PLAN	Done just prior to initiation of the phase. Selectively applicable for equipment level acquisitions.
102.2.2	Updates	
103	REVIEWS	
103.2.1	Procedures	Mil-Std-1388-1A not the primary implementation document for documenting program and design review procedures. See SOW req't for these reviews.
103.2.2	Design Reviews	Selectively applicable to equipment level acquisitions
103.2.3	Program Reviews	Mil-Std-1388-1A not the primary implementing document. See Mil-Std-1521A and SOW req't for technical reviews.
103.2.4	LSA Prog Review	Selectively applicable to equipment level acquisitions
201.2.3	Field Visits	
201.2.4	Report & Update	Mil-Std-1388-1A not the primary implementing document.
202	STANDARDIZATION	Selectively applicable for equipment level acquisitions.
		Mil-Std-1388-1A not the primary implementing document. Other standards, such as Mil-Std-965, and other SOW taskings provide specific standardization procedures and requirements to the contractor.

Tailored Tasks and Subtasks
FSD Phase Program

Task No.	Task	Comments
202.2.3	Approaches	Selectively applicable for equipment level acquisitions.
203	COMPARATIVE ANALYSIS	
204	TECH. OPPORTUNITIES	Selectively applicable.
205	SUPP'T DESIGN FACTOR	
301	FUNCT'L REQ'TS IDENT	
301.2.1	Functional Req'ts	Selectively applicable.
301.2.3	Risks	Requires considerable interpretation of intent to be cost effective. Selectively applicable.
301.2.4	Ops & Mx Tasks	Requires considerable interpretation of intent to be cost effective.
301.2.4.1	FMECA	
301.2.4.2	Reliab. Center Mx	
301.2.4.3	Other Tasks	
301.2.5	Design Alternatives	
301.2.6	Updates	
302	SUPP'T SYS ALTERNAT	
302.2.1	Alt. Supp't Concepts	Selectively applicable.
302.2.2	Updates	Selectively applicable for equipment level acquisitions.
302.2.3	Alt. Supp't Plans	
302.2.4	Plan Updates	
302.2.5	Risks	
303.2.1	Tradeoff Criteria	Selectively applicable.
303.2.2	Support Sys. Trades	
303.2.4	Readiness Sensitivit	
303.2.5	Manpower Tradeoffs	
303.2.6	Training Tradeoffs	
303.2.7	Repair Level Analys.	
303.2.8	Diagnostic Tradeoffs	Selectively applicable.
303.2.10	Energy Tradeoffs	Requires considerable interpretation of intent to be cost effective.
303.2.11	Survivability Trades	Selectively applicable.
303.2.12	Transport'y Trades	Selectively applicable for equipment level acquisitions.
401	TASK ANALYSIS	
401.2.1	Task Analysis	
401.2.2	Analysis Document.	

Tailored Tasks and Subtasks
FSD Phase Program

Task No.	Task	Comments
401.2.3	New/Crit Supp't Res.	Selectively applicable for equipment level acquisitions.
Task No.	Task	Comments
401.2.4	Training Req'ts	Selectively applicable for equipment level acquisitions.
401.2.5	Desing Improvements	
401.2.6	Management Plan	
401.2.7	Transport'y Analysis	Requires considerable to be cost effective.
401.2.8	Provisioning Req'ts	
401.2.9	Validation	
401.2.10	ILS Output Products	Selectively applicable for equipment level acquisitions.
401.2.11	LSAR Updates	
402	EARLY FIELDING ANAL.	
402.2.3	Impact of Shortfalls	
402.2.4	Combat Resource Rqts	
402.2.5	Problem Resolut. Pln	
403	POST PROD SUP'T ANAL	
501	SUPP'T'Y T&E & VERIF	
501.2.1	T&E Strategy	Selectively applicable.
501.2.2	Objectv's & Criteria	Selectively applicable for equipment level acquisitions.
501.2.3	Updates & Corr. Act.	Selectively applicable for equipment level acquisitions.

Appendix G
MAIN.PRG Program Code

```
*****  
*          *  
*  MAIN.PRG  *  
*          *  
*****
```

*THIS IS THE MAIN PROGRAM FOR THE LSA DECISION SUPPORT SYSTEM PROGRAM.
*PURPOSE OF THE PROGRAM IS TO HELP INITIALLY TAILOR LSA TASKS FOR
*AN ACQUISITION EFFORT.

*AUTHOR: CAPT PAUL A. DUNBAR, AFIT/LSG (GAL-88S)

SET TALK OFF
SET BELL OFF
SET SCOREBOARD OFF
SET STATUS OFF
SET CONFIRM ON
SET PATH TO C:\DBASE\LSA
CLEAR

TEXT

LOGISTIC SUPPORT ANALYSIS
DECISION SUPPORT SYSTEM

Version 1.0
Last Revision: 20 August 1988

Capt Paul A. Dunbar

ENDTEXT
WAIT

CLEAR
TEXT

NOTE

This program was developed in partial fulfillment of the requirements for the Degree of Master of Science in Acquisition Logistics Management, Air Force Institute of Technology, Wright-Patterson AFB, OH. It is approved for public release; distribution unlimited.

ENDTEXT
WAIT
CLEAR
TEXT

WELCOME TO THE LSA DSS PROGRAM!!

This program was designed to help logisticians and program managers initially tailor Mil-Std-1388-1A LSA requirements for contracting. Please be advised that the output of this program shouldn't be construed as a definitive listing of LSA tasks that should be levied on the contractor. This program should be used to develop a good "first cut" at tailoring the LSA tasks identified in Mil-Std-1388-1A. Individuals experienced in the application of LSA should review the output of this program to ensure the appropriate tasks are incorporated into the contractual effort.

ENDTEXT
WAIT
CLEAR
TEXT

This program has four main features. You can review descriptions of the different LSA tasks and subtasks, review generally applicable tasks for acquisition efforts based upon the acquisition phase the program will enter, use the LSA DSS routine to uniquely tailor LSA tasks for your contractual effort, and review AFALC lessons learned that apply to LSA.

PLEASE NOTE

ONCE THE LSA DSS ROUTINE IS STARTED, IT CANNOT BE STOPPED WITHOUT THE

USER HAVING TO RESTART FROM THE BEGINNING OF THE PROGRAM.

```
ENDTEXT
WAIT
CLEAR
```

TEXT

Once the LSA DSS routine has been completed, a listing of tailored subtasks can be printed and/or reviewed on-screen. The listing of subtasks will include comments relative to particular subtasks and an annotation if you were unsure about the need to task a contractor to perform certain subtasks.

```
ENDTEXT
WAIT
CLEAR
DO WHILE .T.
CHOICE=0
CLEAR
TEXT
```

Which of the following routines would you like to use?

- (1) Description of LSA tasks/subtasks
- (2) Task/subtask applicability matrix by acquisition phase
- (3) Decision support system for unique tailoring of LSA tasks/subtasks
- (4) AFALC LSA Lessons Learned
- (5) Exit the program

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,5
```

```
READ
DO CASE
CASE CHOICE=1
  DO DESCRIBE.PRG
CASE CHOICE=2
  DO MATRIX.PRG
CASE CHOICE=3
  DO OPT3.PRG
CASE CHOICE=4
  DO LESSONS.PRG
CASE CHOICE=5
  EXIT
ENDCASE
LOOP
```

ENDDO

SET TALK ON
SET BELL ON
SET SCOREBOARD ON
SET STATUS ON
SET CONFIRM OFF
SET PATH TO C:
CLEAR ALL
RETURN

Appendix H

MATRIX.PRG Program Code

```
*****  
*  
*  MATRIX.PRG  *  
*  
*****
```

```
*Lists generally applicable subtasks by acquisition phase  
USE TASKS1  
mPHASE=0  
CLEAR  
TEXT
```

What acquisition phase will the program enter?

Please answer:

- (1) Conceptual
- (2) Demonstration/Validation
- (3) Full-Scale Engineering Development
- (4) Production

```
ENDTEXT  
@20,10 SAY 'What is your choice? ' GET mPHASE;  
      PICTURE "9" RANGE 1,4  
READ  
DO WHILE .T.  
CHOICE=0  
CLEAR  
TEXT  
Would you like the results of this program sent to the screen,  
printer, or file MATRIX.TXT?
```

NOTE: Saving the results to the file MATRIX.TXT will overwrite anything previously saved from using this portion of the program. This screen will be repeated until you select option 4 to return to the main menu and conclude using this portion of the program. For options 1 thru 3, the output report will first scroll through the screen. It will be repeated for option 1 a page at a time.

Please answer:

- (1) Screen
- (2) Printer
- (3) File

(4) Return to main menu

```
ENDTEXT
@22,10 SAY 'What is your choice? ' GET CHOICE;
      PICTURE "9" RANGE 1,4
READ
DO CASE
  CASE CHOICE=1
    DO CASE
      CASE mPHASE=1
        REPORT FORM CONCEPT TO TEMP FOR CONCEPT
        !TYPE TEMP.TXT : MORE
        WAIT
        !ERASE TEMP.TXT
      CASE mPHASE=2
        REPORT FORM DEM_VAL TO TEMP FOR DEMVAL
        !TYPE TEMP.TXT : MORE
        WAIT
        !ERASE TEMP.TXT
      CASE mPHASE=3
        REPORT FORM FSED TO TEMP FOR FSD
        !TYPE TEMP.TXT : MORE
        WAIT
        !ERASE TEMP.TXT : MORE
      CASE mPHASE=4
        REPORT FORM PROD TO TEMP FOR PROD
        !TYPE TEMP.TXT : MORE
        WAIT
        !ERASE TEMP.TXT : MORE
    ENDCASE
  CASE CHOICE=2
    DO CASE
      CASE mPHASE=1
        REPORT FORM CONCEPT TO PRINTER FOR CONCEPT
      CASE mPHASE=2
        REPORT FORM DEM_VAL TO PRINTER FOR DEM_VAL
      CASE mPHASE=3
        REPORT FORM FSED TO PRINTER FOR FSD
      CASE mPHASE=4
        REPORT FORM PROD TO PRINTER FOR PROD
    ENDCASE
  CASE CHOICE=3
    DO CASE
      CASE mPHASE=1
        REPORT FORM CONCEPT TO MATRIX FOR CONCEPT
      CASE mPHASE=2
        REPORT FORM DEM_VAL TO MATRIX FOR DEMVAL
      CASE mPHASE=3
        REPORT FORM FSED TO MATRIX FOR FSD
      CASE mPHASE=4
        REPORT FORM PROD TO MATRIX FOR PROD
    ENDCASE
  CASE CHOICE=4
```

RETURN
ENDCASE
LOOP
ENDDO
USE

Appendix I

OPT3.PRG Program Code

```
*****  
*      OPT3.PRG - Decision Support System      *  
*      to Uniquely Tailor LSA                 *  
*      Tasks and Subtasks                     *  
*****
```

* OPT3.PRG is a subprogram to MAIN.PRG

```
USE TASKS1      && open TASKS1.DBF  
COPY TO OUTPUT  && copy TASKS1.DBF to OUTPUT.DBF which will  
                  && be used to record unique tailoring decisions  
USE             && closes TASKS1.DBF  
USE OUTPUT      && opens OUTPUT.DBF if OUTPUT.DBF already  
                  && exists, a prompt to overwrite it will be given  
  
CLEAR  
TEXT
```

This portion of the program is written to help you tailor LSA subtasks to be levied on the contractor. You will be asked a series of questions that will lead you through all the LSA task areas. It should take approximately 20 minutes to go through all the questions if you are familiar with work that has already been accomplished for your acquisition effort. Once you have selected an answer, hit the corresponding number and <Return> and the next question will appear.

When answering the questions, if a subtask has been completed without need for further work or if the government will perform a particular subtask, select the answer that doesn't task the contractor to perform the task. (That answer will typically be choice "1".)

```
ENDTEXT  
WAIT  
CLEAR  
TEXT
```

CAUTION: IF YOU ELECT TO ABORT TO THE MAIN MENU WHILE USING THIS PORTION OF THE PROGRAM WITHOUT ANSWERING ALL QUESTIONS, YOU WILL HAVE TO RESTART ANSWERING QUESTIONS FROM THE BEGINNING OF THIS PORTION AGAIN.

```
ENDTEXT  
WAIT  
CLEAR
```

```
mPHASE=0          && mPHASE is a variable that will denote the
CLEAR           &&      acquisition phase the program will enter
TEXT
```

What acquisition phase will the program enter?

- (1) Conceptual
- (2) Demonstration/Validation
- (3) Full-scale engineering development
- (4) Production
- (5) Abort to main menu

The answer to this question is used to select the appropriate comments in the output report after going through this portion of the program. No matter what phase you specify, you will review all subtasks within Mil-Std-1388-1A.

ENDTEXT

```
@21,10 SAY 'What is your choice? ' GET mPHASE;
      PICTURE "9" RANGE 1,5
```

READ

```
IF mPHASE=1 .OR. mPHASE=2 .OR. mPHASE=3 .OR. mPHASE=4
  WAIT
ELSE
  RETURN
ENDIF
```

```
*****
* 100 SERIES TASK QUESTIONS *
*****
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 101 - DEVELOPMENT OF AN EARLY LSA STRATEGY
Subtask 101.2.1 - LSA Strategy

Has an LSA strategy been developed, and have the LSA tasks/subtasks that need to be performed in the early acquisition phases (conceptual, dem/val, or FSD) been identified?

NOTE: In most cases the government will do this subtask. Contractors are normally given this subtask if they will be a sole source contractor going from the FSD to the production phase.

Please answer: (1) Yes

- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

```
@22,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='101.2.1'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='101.2.1'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='101.2.1'
    CASE CHOICE=4
        RETURN
ENDCASE
```

CHOICE=0

CLEAR

TEXT

TASK 101 - DEVELOPMENT OF AN EARLY LSA STRATEGY
 Subtask 101.2.2 - Updates

Will updates to the LSA strategy be required?

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

```
@18,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='101.2.2'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='101.2.2'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='101.2.2'
```

```
CASE CHOICE=4
  RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 102 - LSA PLAN

```
Subtasks 102.2.1 - LSA Plan
  102.2.2 - Updates
```

Has an LSA Plan been previously developed by the contractor or government, or does one need to be developed to describe how the LSA Program will be conducted? If already developed, does the contractor need to update it?

NOTE: See subtask description for extensive notes on contracting subtask 102.2.1.

Please answer:

- (1) Yes, already developed. Task contractor to update
- (2) No, task contractor to develop and update.
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

```
@22,10 SAY 'What is your choice? ' GET CHOICE;
  PICTURE "9" RANGE 1,4
```

READ

DO CASE

CASE CHOICE=1

```
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='102.2.2'
```

CASE CHOICE=2

```
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='102.2.1'
```

```
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='102.2.2'
```

CASE CHOICE=3

```
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='102.2.1'
```

```
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='102.2.2'
```

```
  REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='102.2.1'
```

```
  REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='102.2.2'
```

CASE CHOICE=4

```
  RETURN
```

ENDCASE

```
CHOICE=0
CLEAR
TEXT
```

TASK 103 - PROGRAM AND DESIGN REVIEWS

Subtasks 103.2.1 - Establish Review Procedures
103.2.2 - Design Reviews
103.2.3 - Program Reviews
103.2.4 - LSA Reviews

Are the following reviews required, and if so, should LSA be addressed at those reviews? (NOTE: Other SOW task primarily requires that design and program reviews be accomplished.)

- (A) Design Reviews
- (B) Program Reviews
- (C) LSA Reviews

Please answer: (1) all three
(2) (A) and (B)
(3) (A) and (C)
(4) (B) and (C)
(5) (A) only
(6) (B) only
(7) (C) only
(8) none
(9) not sure
(10) Abort to main menu

ENDTEXT

@24,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "99" RANGE 1,10

READ

DO CASE

CASE CHOICE=1

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.2'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.3'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.4'

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.2'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.3'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.2'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.4'

CASE CHOICE=4

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.3'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.4'

CASE CHOICE=5

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.2'

CASE CHOICE=6

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.3'

CASE CHOICE=7

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.4'
CASE CHOICE=8
CASE CHOICE=9
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.1'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.2'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.3'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='103.2.4'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='103.2.1'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='103.2.2'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='103.2.3'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='103.2.4'
CASE CHOICE=10
RETURN
ENDCASE

CLEAR
TEXT

NOTE REGARDING REVIEWS: See the Task 103 description for extensive notes on contracting this task.

ENDTEXT
WAIT

* 200 SERIES TASK QUESTIONS *

CHOICE=0
CLEAR
TEXT

TASK 201 - USE STUDY

Subtasks 201.2.1 - Supportability Factors
201.2.2 - Quantitative Factors
201.2.4 - Use Study Report and Updates

Have pertinent supportability factors been identified and quantified? (Supportability factors include mobility requirements, deployment scenarios, mission frequency and duration, basing concepts, anticipated service life, operational environment, and human capabilities and limitations.)

NOTE: These subtasks are typically done by the government.

Please answer: (1) Yes
(2) No, task the contractor to do both
(3) Not quantified, task the contractor
(4) Only task contractor to identify
(5) Not sure
(6) Abort to main menu

ENDTEXT

```
@23,10 SAY 'What is your choice? ' GET CHOICE;
      PICTURE "9" RANGE 1,6
READ
DO CASE
  CASE CHOICE=1
  CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.1'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.2'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.4'
  CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.2'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.4'
  CASE CHOICE=4
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.1'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.4'
  CASE CHOICE=5
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.1'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.2'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='201.2.1'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='201.2.2'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='201.2.4'
  CASE CHOICE=6
    RETURN
ENDCASE
```

CHOICE=0

CLEAR

TEXT

TASK 201 - USE STUDY

Subtasks 201.2.3 - Field Visits

201.2.4 - Use Study Report and Updates

Are contractor field visits to operational units and support units required to help identify and quantify the pertinent supportability factors?

NOTE: See subtask description for considerable comments

Please answer: (1) No

(2) Yes, task contractor

(3) Not sure

(4) Abort to main menu

ENDTEXT

```
ENDTEXT  
@20,10 SAY 'What is your choice? ' GET CHOICE;  
PICTURE "9" RANGE 1,4
```

READ

READ
DO CASE

```

CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.3'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.4'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.3'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='201.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='201.2.3'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='201.2.4'
CASE CHOICE=4
    RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
TASK 202 - MISSION HARDWARE, SOFTWARE, AND SUPPORT SYSTEM STANDARDIZATION

    Whether the program is a development or non-development effort,
    is standardization of system/subsystem hardware or software, or
    support system standardization an acquisition requirement?

    NOTE: The government should ensure this task does not duplicate
          other contract requirements for standardization such as the
          parts standardization requirements of Mil-Std-965.

    Please answer: (1) Yes
                  (2) No
                  (3) Unsure
                  (4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice?' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
IF CHOICE=4
    RETURN
ENDIF

IF CHOICE=1 .OR. CHOICE=3      && start IF condition to review
    &&      202 subtasks
    CHOICE=0
    CLEAR
    TEXT
        TASK 202 - MISSION HW, SW, AND SUPPORT SYSTEM STANDARDIZATION
        Subtask 202.2.1 - Supportability Constraints

        Have logistics support resources which have potential benefits
        for use on each system/equipment concept under consideration
        been identified? All elements of ILS should have been considered
        under this subtask.

```

Please answer: (1) Yes
(2) No, task contractor
(3) Unsure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.1'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.1'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='202.2.1'
CASE CHOICE=4
RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
TASK 202 - MISSION HW, SW, AND SUPPORT SYSTEM STANDARDIZATION
Subtask 202.2.2 - Supportability Characteristics

Have supportability, cost, and readiness related information
been provided into hardware and software standardization efforts?

Please answer: (1) Yes
(2) No, task contractor
(3) Unsure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.2'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.2'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='202.2.2'
CASE CHOICE=4

RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT

TASK 202 - MISSION HW, SW, AND SUPPORT SYSTEM STANDARDIZATION
Subtask 202.2.3 - Recommended Approaches

Have recommended mission hardware and software standardization approaches been identified which have utility due to cost, readiness, or supportability considerations without the need for further study?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Unsure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1
CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.3'
CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.3'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='202.2.3'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0
CLEAR
TEXT

TASK 202 - MISSION HW, SW, AND SUPPORT SYSTEM STANDARDIZATION
Subtask 202.2.4 - Risks

Have risks associated with each standardization constraint established been identified?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Unsure
- (4) Abort to main menu

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.4'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='202.2.4'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='202.2.4'
    CASE CHOICE=4
        RETURN
ENDCASE
ENDIF          && end IF condition to review 202 subtasks
```

```
CHOICE=0
CLEAR
TEXT
        TASK 203 - COMPARATIVE ANALYSIS
Subtask 203.2.1 - Identify Comparative Systems
```

Have existing systems and subsystems, useful for comparative analysis with the new system, been identified? (This should include fielded as well as unfielded systems and subsystems.)

Please answer:

- (1) Yes (or no comparable systems/subsystems)
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.1'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.1'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.1'
    CASE CHOICE=4
        RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 203 COMPARATIVE ANALYSIS

Subtask 203.2.2 - Baseline Comparison System

Has a baseline comparison system (BCS) representing characteristics of the new system (or its subsystems) been developed without need for further BCS development?

NOTE: The BCS is used for comparative analyses and identifying supportability, cost, and readiness drivers of each significantly different new system/equipment alternative. The BCS should address all functional requirements of the system identified via LSA Task 201; new technologies may be required to satisfy some functional requirements.

Please answer: (1) Yes (or no comparable systems/subsystems)

(2) No, task contractor

(3) Unsure

(4) Abort to main menu

ENDTEXT

@23,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.2'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.2'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.2'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 203 - COMPARATIVE ANALYSIS

Subtask 203.2.3 - Comparative System Characteristics

Have the operation and support costs, logistics support resources requirements, reliability and maintainability values, and readiness values of the comparative systems been identified?

Please answer: (1) Yes

(2) No, task contractor

(3) Unsure

(4) Abort to main menu

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.3'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.3'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.3'
CASE CHOICE=4
    RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
```

TASK 203 - COMPARATIVE ANALYSIS
Subtask 203.2.4 - Qualitative Supportability Problems

Have qualitative supportability problems on comparative systems which should be prevented on the new system been identified?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Unsure
- (4) Abort to main menu

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.4'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.4'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 203 - COMPARATIVE ANALYSIS
Subtask 203.2.5 - Supportability, Cost, and Readiness Drivers

Have supportability, cost, and readiness drivers for each

comparative system or subsystem been determined?

Please answer: (1) Yes
(2) No, task contractor
(3) Unsure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1
CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.5'
CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.5'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.5'

CASE CHOICE=4
RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 203 - COMPARATIVE ANALYSIS

Subtask 203.2.6 - Unique System Drivers

Have unique supportability, cost, and readiness drivers for the new system and subsystems been determined for which there are no comparable systems?

Please answer: (1) Yes
(2) No, task contractor
(3) Unsure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1
CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.6'
CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.6'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.6'

CASE CHOICE=4

RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT

TASK 203 COMPARATIVE ANALYSIS

Subtask 203.2.7 - Updates

Are updates to the comparative system description; their associated parameters; and the supportability, cost, and readiness drivers required?

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Unsure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.7'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.7'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.7'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0
CLEAR
TEXT

TASK 203 - COMPARATIVE ANALYSIS

Subtask 203.2.8 - Risks and Assumptions

Have the risks and assumptions associated with the use of the comparative systems and their associated parameters and drivers been documented?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Unsure
- (4) Abort to main menu

ENDTEXT

```
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.8'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='203.2.8'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='203.2.8'
    CASE CHOICE=4
        RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
```

TASK 204 - TECHNOLOGICAL OPPORTUNITIES
Subtask 204.2.1 - Recommended Design Objectives

Have design technology approaches to achieve supportability improvements on the new system over existing systems been identified and established?

NOTE: The type of program and its phase need to be considered. Is it not too late for technological opportunities to be cost effective, and does the program lend itself to benefits from technological opportunities? If yes to these questions, then this subtask may be applicable to the program.

Please answer: (1) Yes
(2) No, task contractor
(3) Unsure
(4) Abort to main menu

```
ENDTEXT
@23,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='204.2.1'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='204.2.1'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='204.2.1'
    CASE CHOICE=4
        RETURN
ENDCASE

CHOICE=0
```

```

CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='205.2.3'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='205.2.3'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='205.2.3'
CASE CHOICE=4
    RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
TASK 205 - SUPPORTABILITY AND SUPPORTABILITY RELATED DESIGN FACTORS
Subtask 205.2.4 - NATO Constraints

    Have constraints that preclude adoption of NATO system/
    equipment been identified?

    Please answer: (1) Yes
                    (2) No, task contractor
                    (3) Not sure
                    (4) Abort to main menu
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='205.2.4'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='205.2.4'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='205.2.4'
    CASE CHOICE=4
        RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
TASK 205 - SUPPORTABILITY AND SUPPORTABILITY RELATED DESIGN FACTORS
Subtask 205.2.5 - Supportability Goals and Thresholds

    Are updates to supportability, cost, and readiness objectives and
    established goals and thresholds required as new system/equipment
    alternatives become better defined?

    Please answer: (1) No

```

```
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='205.2.5'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='205.2.5'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='205.2.5'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
*****
* 300 SERIES TASK QUESTIONS *
*****
```

```
CLEAR
CHOICE=0
TEXT
    TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION
Subtasks 301.2.1 - Functional Requirements
    301.2.5 - Design Alternatives
    301.2.6 - Updates
```

Have the functional requirements for new system alternatives in both peacetime and wartime operational environments been identified and documented?

NOTE: Ensure a government determination be made as to whether LSA should be performed for peacetime and wartime operations and task the contractor accordingly.

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
@23,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
```

```

CASE CHOICE=2
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.1'
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.5'
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.6'
CASE CHOICE=3
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.1'
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.5'
  REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.6'
  REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.1'
  REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.5'
  REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.6'
CASE CHOICE=4
  RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
  TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION
  Subtask 301.2.2 - Unique Functional Requirements

  Have those functions which are unique to the new system
  due to new design technology or operational concepts, or
  which are supportability, cost, or readiness drivers been
  identified?

  Please answer: (1) Yes
                (2) No, task contractor
                (3) Not sure
                (4) Abort to main menu
ENDTEXT
@20,10 SAY 'What is your answer? ' GET CHOICE;
  PICTURE "9" RANGE 1,4
READ
DO CASE
  CASE CHOICE=1
  CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.2'
  CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.2'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.2'
  CASE CHOICE=4
    RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
  TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION
  Subtask 301.2.3 - Risks

```

Have the risks involved in satisfying the functional requirements of the new system/equipment been identified?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to the main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

 REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.3'

CASE CHOICE=3

 REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.3'

 REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.3'

CASE CHOICE=4

 RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION

Subtask 301.2.4 - Operations and Maintenance Tasks

 301.2.4.3 - Operations and Support Tasks not Identified
 by FMECA or RCM

 301.2.5 - Design Alternatives

 301.2.6 - Updates

Have the operations and maintenance tasks for the new system been identified based on the identified functional requirements without need for further identification?

NOTE: Subtask 301.2.4 is a key driver to development of the LSA record (LSAR); provides input to Task 401, Task Analysis.

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

@23,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

```
READ
DO CASE
  CASE CHOICE=1
  CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4.3'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.5'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.6'
  CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4.3'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.5'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.6'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.4.3'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.5'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.6'
  CASE CHOICE=4
    RETURN
ENDCASE
```

IF CHOICE=2 .OR. CHOICE=3

```
CHOICE=0
CLEAR
TEXT
```

TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION
Subtask 301.2.4.1 - Failure Modes, Effects, & Criticality Analysis
(FMECA)

Will the contractor be required to perform a FMECA?

NOTE: Mil-Std-1629A is the primary tasking document for
FMECAs. Subtask 301.2.4.1 requires that the contractor
use the results of the FMECA.

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
@23,10 SAY 'What is your choice? ' GET CHOICE;
  PICTURE "9" RANGE 1,4
```

```
READ
DO CASE
  CASE CHOICE=1
  CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4.1'
```

```
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4.1'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.4.1'
CASE CHOICE=4
    RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
    TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION
Subtask 301.2.4.2 - Reliability Centered Maintenance (RCM)

    Will the contractor be required to perform RCM analysis?

    NOTE: Mil-Std-1843 is the primary tasking document for RCM.
          Subtask 301.2.4.2 uses the results of that analysis.

    Please answer: (1) No
                  (2) Yes, task contractor
                  (3) Not sure
                  (4) Abort to main menu
```

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4.2'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='301.2.4.2'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='301.2.4.2'
    CASE CHOICE=4
        RETURN
ENDCASE
ENDIF
```

```
CHOICE=0
CLEAR
TEXT
    TASK 302 - SUPPORT SYSTEM ALTERNATIVES
Subtask 302.2.1 - Alternative Support Concepts
```

Must the contractor develop and document viable alternative support concepts (including contractor logistics support in total, in part, or on an interim basis) for the new system/equipment? (NOTE: This should be done to a level commensurate with

hardware, software, and operational concept development and address all ILS elements.)

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.1'

CASE CHOICE=1

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.1'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='302.2.1'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 302 - SUPPORT SYSTEM ALTERNATIVES

Subtask 302.2.2 - Support Concept Updates

Are updates to alternative support concepts (including procedures for updating concepts) required?

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.2'

CASE CHOICE=1

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.2'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='302.2.2'

CASE CHOICE=4

```

        RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
        TASK 302 - SUPPORT SYSTEM ALTERNATIVES
Subtask 302.2.3 - Alternative Support Plans

        Must the contractor develop viable alternative support plans
        for the new system/equipment?

        Please answer: (1) No
                        (2) Yes, task contractor
                        (3) Not sure
                        (4) Abort to main menu
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
        PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.3'
    CASE CHOICE=1
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.3'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='302.2.3'
    CASE CHOICE=4
        RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
        TASK 302 - SUPPORT SYSTEM ALTERNATIVES
Subtask 302.2.4 - Support Plan Updates

        Are updates and refinements to support plans required?

        Please answer: (1) No
                        (2) Yes, task contractor
                        (3) Not sure
                        (4) Abort to main menu
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
        PICTURE "9" RANGE 1,4
READ

```

```
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.4'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='302.2.4'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
CHOICE=0
```

```
CLEAR
```

```
TEXT
```

TASK 302 - SUPPORT SYSTEM ALTERNATIVES

```
Subtask 302.2.5 - Risks
```

Must the contractor identify the risks associated with each support system alternative that has been formulated?

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
```

```
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
```

```
READ
```

```
DO CASE
```

```
CASE CHOICE=1
```

```
CASE CHOICE=2
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.5'
```

```
CASE CHOICE=3
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='302.2.5'
```

```
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='302.2.5'
```

```
CASE CHOICE=4
```

```
    RETURN
```

```
ENDCASE
```

```
*****
*          TASK 303 SERIES QUESTIONS
*****
```

```
CHOICE=0
```

```
CLEAR
```

```
TEXT
```

PLEASE NOTE: The next series of questions pertains to Task 303, Evaluation of Alternatives and Tradeoff Analysis. The following work can be required for each analysis (subtask 303.2.2 thru 303.2.12), and should be tailored as appropriate. Subtask 303.2.1

should be reviewed for tailoring separately from this program if any of the 303 series tasks are levied on the contractor.

ENDTEXT

WAIT

CLEAR

TEXT

The following evaluations and tradeoffs are tasked via Subtask 303.2.1:

- (1) Tradeoff between support system alternatives for each system/equipment alternative
- (2) Tradeoff between design, operations, and support concepts
- (3) Evaluation of sensitivity of system readiness parameters to changes in key design and support parameters (such as R&M, spares budgets, resupply time, and manpower and personnel skill availability)
- (4) Estimate manpower and personnel implications of alternatives
- (5) Tradeoff between design, operations, training, and personnel job design to optimize attaining and maintaining operations and support personnel proficiency
- (6) Conduct a repair level analysis (This work effort must be more completely specified apart from Mil-Std-1388-1A tailoring)
- (7) Evaluate alternative diagnostic concepts to include degree of BIT, off-line-test, manual test, automatic test, etc.

(continued)

ENDTEXT

WAIT

CLEAR

TEXT

- (8) Do comparative evaluation between supportability, cost, and readiness parameters of the new system/equipment and existing comparable systems/equipment.
- (9) Tradeoff between alternatives and energy requirements
- (10) Tradeoff between alternatives and survivability and battle damage characteristics in a combat environment
- (11) Tradeoff between alternatives and transportability requirements

ENDTEXT

WAIT

CLEAR

TEXT

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.2 - Support System Tradeoffs

Have evaluations and tradeoffs been conducted between support system alternatives for each system/equipment alternative without need for further evaluations and tradeoffs?

Please answer: (1) Yes

(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1
CASE CHOICE=2
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.2'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.2'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.2'

CASE CHOICE=4
RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.3 - System Tradeoffs

Have evaluations and tradeoffs been conducted between
design, operations, and support concepts without need
for further evaluations and tradeoffs?

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.3'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.3'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.3'

CASE CHOICE=4

```
      RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.4 - Readiness Sensitivities

Has an evaluation of the sensitivity of system readiness parameters to changes in key design and support parameters (such as R&M, spares budgets, resupply time, and manpower and personnel skill availability) been accomplished without need for further evaluation?

NOTE: Ensure the government identifies what sensitivity analyses the contractor must conduct.

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
```

```
@22,10 SAY 'What is your choice? ' GET CHOICE;
      PICTURE "9" RANGE 1,4
```

```
READ
```

```
DO CASE
```

```
  CASE CHOICE=1
```

```
  CASE CHOICE=2
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.4'
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
```

```
  CASE CHOICE=3
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.4'
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
```

```
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.4'
```

```
  CASE CHOICE=4
```

```
    RETURN
```

```
ENDCASE
```

```
CHOICE=0
```

```
CLEAR
```

```
TEXT
```

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.5 - Manpower and Personnel Tradeoffs

Have manpower and personnel implications of alternative system/equipment concepts in terms of total number of personnel required, job classifications, skill levels, and experience required been estimated and evaluated

without need for further evaluation?

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.5'

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.5'

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.5'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.6 - Training Tradeoffs

Have evaluations and tradeoffs been conducted between design, operations, training, and personnel job design to determine the optimum solution for attaining and maintaining the required proficiency of operating and support personnel without need for further evaluations and tradeoffs?

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.6'

```
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.6'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.6'
CASE CHOICE=4
RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.7 - Repair Level Analysis

Has a repair level analysis been conducted commensurate
without need for further analysis?

NOTE: This subtask is not the driver for RLA; the results of
RLA are used in this subtask to determine what level an
item will be repaired.

There are several types of repair analysis (NRLA, IRLA,
"RLA, Equal Cost Curves, and more). The government must
specify the model the contractor will use.

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

```
ENDTEXT
@23,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
```

```
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.7'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.7'
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.7'
CASE CHOICE=4
RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.8 - Diagnostic Tradeoffs

Have alternative diagnostic concepts been evaluated to include degree of BIT, off-line-test, manual test, automatic test, etc. without need for further evaluation?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.8'

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.8'

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.8'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.9 - Comparative Evaluations

Have comparative evaluations been performed between supportability, cost, and readiness parameters of the new system/equipment and existing comparable systems/equipment without need for further comparative evaluation?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

```
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.9'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.9'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.9'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.10 - Energy Tradeoffs

Have evaluations and tradeoffs been conducted between system/equipment alternatives and energy requirements without need for further evaluations and tradeoffs?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
```

```
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
```

```
READ
```

```
DO CASE
```

```
CASE CHOICE=1
```

```
CASE CHOICE=2
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.10'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
```

```
CASE CHOICE=3
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.10'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.10'
```

```
CASE CHOICE=4
```

```
    RETURN
```

```
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.11 - Survivability Tradeoffs

Have evaluations and tradeoffs been conducted between system/equipment alternatives and survivability and battle damage repair characteristics in a combat environment without need for further evaluations and tradeoffs?

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

 REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.11'
 REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'

CASE CHOICE=3

 REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.11'
 REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
 REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.11'

CASE CHOICE=4

 RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS
Subtask 303.2.12 - Transportability Tradeoffs

Have evaluations and tradeoffs been conducted between system/equipment alternatives and transportability requirements without need for further evaluation and tradeoffs?

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

```
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.12'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.12'
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='303.2.1'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='303.2.12'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
*****
* 400 SERIES TASK QUESTIONS *
*****
```

```
CHOICE=0
CLEAR
TEXT
        TASK 401 - TASK ANALYSIS
Subtask 401.2.1 - Task Analysis
        401.2.2 - Analysis Documentation
```

Has a detailed task analysis been conducted for each required operation and maintenance task identified for the new system (or for specific portions of the system) without need for further analysis? (Subtask 301.2.4 identifies operation and maintenance tasks.)

NOTE: Subtask 401.2.2 is required for the LSA record (LSAR).

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
@21,10 SAY 'What is your choice? ' GET CHOICE;
        PICTURE "9" RANGE 1,4
```

```
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.1'
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.2'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.1'
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.2'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.1'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.2'
    CASE CHOICE=4
        RETURN
```

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 401 - TASK ANALYSIS

Subtask 401.2.3 - New/Critical Support Resources

Have all new or critical logistics resources required to operate or maintain the system/equipment been identified?

(Critical resources are those which are not necessarily new but require special management attention due to schedule constraints, cost implications, or known scarcities.)

NOTE: This subtask is required to complete the LSA record (LSAR).

Please answer: (1) Yes

(2) No, task contractor

(3) Not sure

(4) Abort to main menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;

PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.3'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.3'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.3'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 401 - TASK ANALYSIS

Subtask 401.2.4 - Training Requirements and Recommendations

Based on the task analysis, have all training requirements and recommendations for training been identified?

NOTE: This subtask is required to complete the LSA record (LSAR).

Please answer: (1) Yes

(2) No, task contractor

(3) Not sure
(4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.4'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.4'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.4'
CASE CHOICE=4
RETURN
ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 401 - TASK ANALYSIS

Subtask 401.2.5 - Design Improvements

Must the contractor determine which tasks fail to meet goals or constraints, and propose alternative designs and participate in developing alternative approaches to optimize and simplify tasks?

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.5'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.5'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.5'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 401 - TASK ANALYSIS

Subtask 401.2.5 - Management Plans

Based upon identified new or critical resources, have management actions been identified that can be taken to minimize risks?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.6'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.6'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.6'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 401 - TASK ANALYSIS

Subtask 401.2.7 - Transportability Analysis

Is a transportability analysis required for the new system/equipment?

NOTE: This subtask is required to complete the LSA record (LSAR).

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

```

CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.7'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.7'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.7'
CASE CHOICE=4
    RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
        TASK 401 - TASK ANALYSIS
Subtask 401.2.8 - Provisioning Requirements

    Must provisioning documentation be developed or updated?

    NOTE: This subtask is required to complete the LSA record (LSAR).

    Please answer: (1) No
                    (2) Yes, task contractor
                    (3) Not sure
                    (4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.8'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.8'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.8'
    CASE CHOICE=4
        RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
        TASK 401 - TASK ANALYSIS
Subtask 401.2.9 - Validation

    Should the contractor be required to validate key
    documentation in the logistics support analysis record
    (LSAR) through operations and maintenance performed
    on-equipment (be it prototype equipment, or equipment
    commensurate with the level of development or production)?

```

NOTE: LSAR validation will overlap T.O. validation required via AFTMCR 80-1. The government should ensure no duplication of effort.

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@22,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.9'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.9'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.9'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 401 - TASK ANALYSIS

Subtask 401.2.10 - ILS Output Products

Are output reports and summaries (which can include the LSAR itself) required to satisfy ILS documentation requirements?

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.10'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.10'

```
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.10'
CASE CHOICE=4
  RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 401 - TASK ANALYSIS
Subtask 401.2.11 - LSAR Updates

Are updates to the LSAR required as better information becomes available and as engineering source data is updated?

NOTE: This subtask should be required if an LSA record (LSAR) is required.

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
```

```
@20,10 SAY 'What is your choice? ' GET CHOICE;
  PICTURE "9" RANGE 1,4
```

```
READ
```

```
DO CASE
```

```
  CASE CHOICE=1
```

```
  CASE CHOICE=2
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.11'
```

```
  CASE CHOICE=3
```

```
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='401.2.11'
```

```
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='401.2.11'
```

```
  CASE CHOICE=4
```

```
    RETURN
```

```
ENDCASE
```

*Task 402 Early Fielding Analysis

```
CHOICE=0
CLEAR
TEXT
```

TASK 402 - EARLY FIELDING ANALYSIS
Subtask 402.2.1 - New System Impact

Is it necessary to assess the impact on existing systems (weapon, supply, maintenance, transportation) from the introduction of the new system/equipment? This assessment can include impacts to depot level maintenance requirements.

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.1'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.1'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='402.2.1'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 402 - EARLY FIELDING ANALYSIS

Subtask 402.2.2 - Sources of Manpower and Personnel Skill

Has existing manpower and personnel been analyzed to determine sources for obtaining the required manpower and personnel for the new system?

Please answer: (1) Yes
(2) No, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.2'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.2'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='402.2.2'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 402 - EARLY FIELDING ANALYSIS

Subtask 402.2.3 - Impact of Resource Shortfalls

Is an assessment of the impact on readiness of the new system resulting from the failure to obtain required logistics support resources required?

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;

PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.3'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.3'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='402.2.3'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 402 - EARLY FIELDING ANALYSIS

Subtask 402.2.4 - Combat Resource Requirements

Without duplicating the analysis performed under Task 303 (evaluation of alternatives and tradeoffs), is a survivability analysis necessary to determine changes in logistics support resource requirements based on combat usage?

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT

```
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.4'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='402.2.4'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 402 - EARLY FIELDING ANALYSIS
Subtask 402.2.5 - Plans Problem Resolution

Should the contractor be tasked to develop plans to implement solutions to problems surfaced from early fielding analysis?

Please answer:

- (1) No
- (2) Yes, task contractor
- (3) Not sure
- (4) Abort to main menu

```
ENDTEXT
```

```
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
```

```
READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.5'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='402.2.5'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='402.2.5'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 403 - POST PRODUCTION SUPPORT ANALYSIS
Subtask 403.2 - Post Production Support Plan

Should the contractor be tasked to assess the useful life of

the new system; identify support items that present potential problems due to inadequate supply after shutdown of production lines; develop and analyze alternative solutions; and develop plans to ensure effective support of the new system.

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='403.2'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='403.2'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='403.2'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 501 - SUPPORTABILITY TEST, EVALUATION, AND VERIFICATION
Subtask 501.2.1 - Test and Evaluation Strategy

Should the contractor be required to provide a test and evaluation strategy for verification of supportability, identification of potential test program limitations, and the effect on the accuracy of the supportability assessment?

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.1'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.1'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='501.2.1'
CASE CHOICE=4
RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT

TASK 501 - SUPPORTABILITY TEST, EVALUATION, AND VERIFICATION
Subtask 501.2.2 - Objectives and Criteria

Have test and evaluation program objectives and criteria been identified with test resources, procedures, and schedules required to meet those objectives?

Please answer:

- (1) Yes
- (2) No, task contractor
- (3) Not sure
- (4) Abort to main menu

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ
DO CASE
CASE CHOICE=1
CASE CHOICE=2
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.2'
CASE CHOICE=3
REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.2'
REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='501.2.2'
CASE CHOICE=4
RETURN
ENDCASE

CHOICE=0
CLEAR
TEXT
TASK 501 - SUPPORTABILITY TEST, EVALUATION, AND VERIFICATION
Subtask 501.2.3 - Updates and Corrective Actions

Should the contractor be required to analyze test results, verify/assess the achievement of specified supportability requirements, determine the extent of improvement required to meet established goals and thresholds if they are not met, and update support plans and the LSAR?

NOTE: This subtask is required if an LSAR is required. This subtask

provides feedback for those Mil-Std-1388-1A subtasks required for LSAR development.

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@23,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

CASE CHOICE=1

CASE CHOICE=2

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.3'

CASE CHOICE=3

REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.3'

REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='501.2.3'

CASE CHOICE=4

RETURN

ENDCASE

CHOICE=0

CLEAR

TEXT

TASK 501 - SUPPORTABILITY TEST, EVALUATION, AND VERIFICATION
Subtask 501.2.4 - Supportability Assessment Plan (Post Deployment)

Should the contractor be required to analyze standard reporting systems to determine the amount and accuracy of supportability information that will be obtained on the new system/equipment? (If standard reporting systems are inadequate to capture all important supportability data, the contractor is tasked under subtask 501.2.4 to develop a plan to collect that data in the equipment's operational environment.)

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

ENDTEXT

@21,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4

READ

DO CASE

```
CASE CHOICE=1
CASE CHOICE=2
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.4'
CASE CHOICE=3
    REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.4'
    REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='501.2.4'
CASE CHOICE=4
    RETURN
ENDCASE
```

```
CHOICE=0
CLEAR
TEXT
```

TASK 501 - SUPPORTABILITY TEST, EVALUATION, AND VERIFICATION
Subtask 501.2.5 - Supportability Assessment (Post Deployment)

Should the contractor be tasked to analyze supportability data as it becomes available from standard supply, maintenance, and readiness reporting systems and from any special data collection programs implemented on the new system/equipment?

Please answer: (1) No
(2) Yes, task contractor
(3) Not sure
(4) Abort to main menu

```
ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
    PICTURE "9" RANGE 1,4
```

```
READ
DO CASE
    CASE CHOICE=1
    CASE CHOICE=2
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.5'
    CASE CHOICE=3
        REPLACE APPLICABLE WITH .T. FOR TASK_NUM='501.2.5'
        REPLACE UNSURE WITH 'UNSURE' FOR TASK_NUM='501.2.5'
    CASE CHOICE=4
        RETURN
ENDCASE
```

```
DO WHILE .T.
CHOICE=0
CLEAR
TEXT
```

That ends the series of questions for tailoring the LSA tasks.

Would you like the results of this program sent to the screen, printer, or file LSADSS.TXT? (Note: This screen will be repeated until you select option 4 to abort to the main menu and conclude using the unique tailoring portion of the program.)

Please answer: (1) Screen
(2) Printer
(3) File
(4) Return to main menu

Note: The output file will scroll through the screen for all three options. For option one, let it scroll, it will be displayed a second time a page at a time. If you save the output to a file, the program will overwrite what you have saved the last time the program was used.

```
ENDTEXT
@22,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "9" RANGE 1,4
READ
DO CASE
  CASE CHOICE=1
    DO CASE
      CASE mPHASE=1
        REPORT FORM TLRDCONC TO TEMP FOR APPLICABLE
        !TYPE TEMP.TXT : MORE
        !ERASE TEMP.TXT
      CASE mPHASE=2
        REPORT FORM TLRDDEMV TO TEMP FOR APPLICABLE
        !TYPE TEMP.TXT : MORE
        !ERASE TEMP.TXT
      CASE mPHASE=3
        REPORT FORM TLRDFSD TO TEMP FOR APPLICABLE
        !TYPE TEMP.TXT : MORE
        !ERASE TEMP.TXT
      CASE mPHASE=4
        REPORT FORM TLRDPROD TO TEMP FOR APPLICABLE
        !TYPE TEMP.TXT : MORE
        !ERASE TEMP.TXT
    ENDCASE
  CASE CHOICE=2
    DO CASE
      CASE mPHASE=1
        REPORT FORM TLRDCONC TO PRINTER FOR APPLICABLE
      CASE mPHASE=2
        REPORT FORM TLRDDEMV TO PRINTER FOR APPLICABLE
      CASE mPHASE=3
        REPORT FORM TLRDFSD TO PRINTER FOR APPLICABLE
      CASE mPHASE=4
        REPORT FORM TLRDPROD TO PRINTER FOR APPLICABLE
    ENDCASE
  ENDIF
```

```
CASE CHOICE=3
DO CASE
  CASE mPHASE=1
    REPORT FORM TLRDCONC TO LSADSS FOR APPLICABLE
  CASE mPHASE=2
    REPORT FORM TLRDDEMV TO LSADSS FOR APPLICABLE
  CASE mPHASE=3
    REPORT FORM TLRDFSD TO LSADSS FOR APPLICABLE
  CASE mPHASE=4
    REPORT FORM TLRDPROD TO LSADSS FOR APPLICABLE
  ENDCASE
CASE CHOICE=4
  RETURN
ENDCASE
LOOP
ENDDO
```

Appendix J

LESSONS.PRG Program Code

```
*****  
*  
*      LESSONS.PRG  
*  
*****
```

**LESSONS.PRG, called from MAIN.PRG

CLEAR
TEXT

This portion of the program contains the AFALC LSA Lessons Learned from the LSA Lessons Learned Bulletin current as of July 1988. As in the AFALC LSA Lessons Learned Bulletin, lessons learned are grouped into three categories: (1) LSA Application, (2) LSAR Data Management, and (3) Logistics Considerations.

The lessons learned will be listed with a number in the left column that you will use to select a particular lesson to review. The AFALC Lessons Learned case study number is also shown with the topic area addressed by the lesson. You will have the option to re-scroll through the list of lessons learned as often as you desire.

ENDTEXT
WAIT
CLEAR
TEXT

The purpose of the AFALC corporate memory bank of lessons learned is to provide feedback for improving our acquisition programs. The lessons included in this program are a small portion of lessons learned available through AFALC. Contact AFACL/LSL, WPAFB, OH 45433-500, AUTOVON 785-3163 to verify the currency of the lessons learned in this program, and to access other lessons learned.

ENDTEXT
WAIT

DO WHILE .T.
CHOICE=0
CLEAR
TEXT

I - LSA APPLICATION

LL #: TOPIC:

- (1) 0458 REPAIR LEVEL ANALYSIS
- (2) 1132 TIMELY HARDNESS CRITICAL REQUIREMENTS
- (3) 1158 LOGISTICS SUPPORT ANALYSIS/LOGISTICS SUPPORT ANALYSIS RECORD (LSA/LSAR)
- (4) 1308 GOVERNMENT SUBMITTAL OF LOGISTICS SUPPORT ANALYSIS (LSA)
DATA RECORD "A" TO CONTRACTORS PRIOR TO FULL SCALE
DEVELOPMENT (FSD) CONTRACT AWARD
- (5) 1373 LOGISTICS SUPPORT ANALYSIS (LSA) CONTRACTUAL PROVISIONS
- (6) 1442 LOGISTICS SUPPORT ANALYSIS (LSA) REVIEWS
- (7) 1493 REQUEST FOR PROPOSAL (RFP) REQUIREMENTS
- (8) 1614 LOGISTICS SUPPORT ANALYSIS/LOGISTICS SUPPORT ANALYSIS RECORD (LSAR) REVIEWS
- (9) 1615 LOGISTICS SUPPORT ANALYSIS/LOGISTICS SUPPORT ANALYSIS RECORD (LSA/LSAR)
- (10) 1616 LOGISTICS SUPPORT ANALYSIS CONTROL NUMBER (LCN) STRUCTURE
- (11) 1620 LOGISTICS SUPPORT ANALYSIS (LSA)

ENDTEXT

WAIT

CLEAR

TEXT

LL #: TOPIC

- (12) 1658 SUPPORT FACILITIES FOR NEW EQUIPMENT
- (13) 1659 IDENTIFICATION OF NEW AND MODIFIED TRAINING DEVICES
REQUIREMENTS
- (14) 1668 CONTRACTOR LOGISTIC SUPPORT (CLS) SPARES AND REPAIR PARTS
- (15) 1798 DEVELOPMENT OF AN END ITEM FROM THE PRODUCT IMPROVEMENT
PROGRAM (PIP)
- (16) 2355 LOGISTICS SUPPORT ANALYSIS (LSA)/LOGISTICS SUPPORT
ANALYSIS RECORD (LSAR) GUIDANCE CONFERENCE AND REVIEWS

II - LSAR DATA MANAGEMENT

- (17) 0366 PREPARATION OF STATEMENT OF WORK (SOW)
- (18) 0461 SUB-CONTRACTOR/VENDOR DATA
- (19) 0944 LOGISTICS SUPPORT ANALYSIS RECORD (LSAR)
- (20) 0945 RELIABILITY AND MAINTAINABILITY (R&M) DATA
- (21) 1132 TIMELY HARDNESS CRITICAL REQUIREMENTS

ENDTEXT

WAIT

CLEAR

TEXT

LL #: TOPIC

- (22) 1157 MONITORING OF ENGINEERING CHANGE PROPOSALS (ECPS)
- (23) 1158 LOGISTICS SUPPORT ANALYSIS/LOGISTICS SUPPORT ANALYSIS

RECORD (LSA/LSAR)
 (24) 1159 FORMAT AND CONTENT OF LOGISTICS SUPPORT ANALYSIS (LSA) DATA
 (25) 1160 LOGISTICS SUPPORT ANALYSIS RECORD (LSAR) AS DATA BASE FOR LIFE CYCLE COSTING (LCC) EFFORTS
 (26) 1308 GOVERNMENT SUBMITTAL OF LOGISTICS SUPPORT ANALYSIS (LSA) DATA RECORD "A" TO CONTRACTORS PRIOR TO FULL SCALE DEVELOPMENT (FSD) CONTRACT AWARD
 (27) 1612 LOGISTICS SUPPORT ANALYSIS RECORD (LSAR) REVIEWS
 (28) 1614 LOGISTICS SUPPORT ANALYSIS/LOGISTICS SUPPORT ANALYSIS RECORD (LSAR) REVIEWS
 (29) 1615 LOGISTICS SUPPORT ANALYSIS/LOGISTICS SUPPORT ANALYSIS RECORD (LSA/LSAR)
 (30) 1616 LOGISTICS SUPPORT ANALYSIS CONTROL NUMBER (LCV) STRUCTURE
 (31) 1618 LOGISTICS SUPPORT ANALYSIS (LSA) FOR PUBLICATIONS
 (32) 1790 CONTRACTUAL REQUIREMENT FOR UPDATE OF THE LOGISTIC SUPPORT ANALYSIS RECORD (LSAR)

ENDTEXT
 WAIT
 CLEAR
 TEXT

III - LOGISTICS CONSIDERATIONS

LL #	TOPIC
(33)	0272 REPAIR LEVEL ANALYSIS - CONTRACTOR TASKING
(34)	0273 RELIABILITY AND MAINTAINABILITY - REPAIR LEVEL ANALYSIS (RLA)
(35)	0448 LOCISTICS CONSIDERATIONS IN FORMING THE WORK BREAKDOWN STRUCTURE (WBS)
(36)	0467 TECHNICAL DATA MANAGEMENT
(37)	0556 FUNDS FOR CONTRACT SUPPORT
(38)	0835 SOURCE, MAINTENANCE, RECOVERABILITY (SMR) CODE CHANGES
(39)	1201 TYPE I TRAINING CONTRACTS
(40)	1311 TIMELY SUBMISSION OF TRADE STUDIES BY CONTRACTORS
(41)	1316 ACCELERATED LEAD TIME FOR SUPPORT EQUIPMENT (SE)
(42)	1486 PRE-SERD (SUPPORT EQUIPMENT RECOMMENDATION DATA) APPROVAL FOR EARLY SE ACQUISITION
(43)	1526 SOURCE SELECTION LIFE CYCLE COST (LCC) EVALUATION
(44)	1617 LSA/LSAR DURING COMPETITIVE CONTRACT EVALUATION
(45)	1706 SYSTEM AVAILABILITY PARAMETERS
(46)	1713 DEPOT MAINTENANCE WORK REQUIREMENTS (DMWR) DEVELOPMENT DURING SYSTEM ACQUISITIONS

ENDTEXT
 DO WHILE .T.
 WAIT
 CLEAR
 TEXT

LL #	TOPIC
(47)	1766 TEST EQUIPMENT

(48) 1798 DEVELOPMENT OF AN END ITEM FROM THE PRODUCT IMPROVEMENT PROGRAM (PIP)

List listing was done in July 1988. Any questions concerning its currency should be directed to AFALC/LSL, AUTOVON 785-3161.

- (49) Review the list of lessons learned
- (50) Return to the main menu

NOTE: The disk containing the AFALC Lessons Learned must be in the "A" Drive to review the above lessons.

ENDTEXT
@20,10 SAY 'What is your choice? ' GET CHOICE;
PICTURE "99" RANGE 1,51
READ
DO CASE
CASE CHOICE=1
!TYPE B:LL0458.TXT : MORE
CASE CHOICE=2
!TYPE B:LL1132.TXT : MORE
CASE CHOICE=3
!TYPE B:LL1158.TXT : MORE
CASE CHOICE=4
!TYPE B:LL1308.TXT : MORE
CASE CHOICE=5
!TYPE B:LL1373.TXT : MORE
CASE CHOICE=6
!TYPE B:LL1442.TXT : MORE
CASE CHOICE=7
!TYPE B:LL1493.TXT : MORE
CASE CHOICE=8
!TYPE B:LL1614.TXT : MORE
CASE CHOICE=9
!TYPE B:LL1615.TXT : MORE
CASE CHOICE=10
!TYPE B:LL1616.TXT : MORE
CASE CHOICE=11
!TYPE B:LL1620.TXT : MORE
CASE CHOICE=12
!TYPE B:LL1658.TXT : MORE
CASE CHOICE=13
!TYPE B:LL1659.TXT : MORE
CASE CHOICE=14
!TYPE B:LL1668.TXT : MORE
CASE CHOICE=15
!TYPE B:LL1798.TXT : MORE
CASE CHOICE=16
!TYPE B:LL2355.TXT : MORE
CASE CHOICE=17
!TYPE B:LL0366.TXT : MORE

CASE CHOICE=18
!TYPE B:LL0461.TXT : MORE
CASE CHOICE=19
!TYPE B:LL0944.TXT : MORE
CASE CHOICE=20
!TYPE B:LL0945.TXT : MORE
CASE CHOICE=21
!TYPE B:LL1132.TXT : MORE
CASE CHOICE=22
!TYPE B:LL1157.TXT : MORE
CASE CHOICE=23
!TYPE B:LL1158.TXT : MORE
CASE CHOICE=24
!TYPE B:LL1159.TXT : MORE
CASE CHOICE=25
!TYPE B:LL1160.TXT : MORE
CASE CHOICE=26
!TYPE B:LL1308.TXT : MORE
CASE CHOICE=27
!TYPE B:LL1612.TXT : MORE
CASE CHOICE=28
!TYPE B:LL1614.TXT : MORE
CASE CHOICE=29
!TYPE B:LL1615.TXT : MORE
CASE CHOICE=30
!TYPE B:LL1616.TXT : MORE
CASE CHOICE=31
!TYPE B:LL1618.TXT : MORE
CASE CHOICE=32
!TYPE B:LL1790.TXT : MORE
CASE CHOICE=33
!TYPE B:LL0272.TXT : MORE
CASE CHOICE=34
!TYPE B:LL0273.TXT : MORE
CASE CHOICE=35
!TYPE B:LL0448.TXT : MORE
CASE CHOICE=36
!TYPE B:LL0467.TXT : MORE
CASE CHOICE=37
!TYPE B:LL0556.TXT : MORE
CASE CHOICE=38
!TYPE B:LL0835.TXT : MORE
CASE CHOICE=39
!TYPE B:LL1201.TXT : MORE
CASE CHOICE=40
!TYPE B:LL1311.TXT : MORE
CASE CHOICE=41
!TYPE B:LL1316.TXT : MORE
CASE CHOICE=42
!TYPE B:LL1486.TXT : MORE
CASE CHOICE=43
!TYPE B:LL1526.TXT : MORE
CASE CHOICE=44

```
!TYPE B:LL1617.TXT ! MORE
CASE CHOICE=45
!TYPE B:LL1706.TXT ! MORE
CASE CHOICE=46
!TYPE B:LL1713.TXT ! MORE
CASE CHOICE=47
!TYPE B:LL1766.TXT ! MORE
CASE CHOICE=48
!TYPE B:LL1798.TXT ! MORE
CASE CHOICE=49
    EXIT
CASE CHOICE=50
    RETURN
ENDCASE
LOOP
ENDDO
LOOP
ENDDO
```

Appendix K

Users Manual

for

The Logistic Support Analysis (LSA) Decision Support System (DSS)

Computer Program

Developed by: Paul A. Dunbar

No Copyright Restrictions

Logistic Support Analysis (LSA) Decision Support System (DSS)

Users Manual

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I. GENERAL DESCRIPTION

Purpose of Program.

This program is intended to aid logistics managers tailor Mil-Std-1388-1A (Logistic Support Analysis) tasks and subtasks for contracting efforts. This program is a decision support system (DSS) which has drawn upon information from AFALC LSA experts, Mil-Std-1388-1A, and the AFALC LSA lessons learned databank. Using this program should help logisticians develop reasonable draft contract requirements; the result of this program should be reviewed by an experienced logistian before finalizing contract requirements. This program is not intended to be an expert system to replace the logistics manager, but rather aid the manager in selecting the right LSA tasks and subtasks for contracting.

Future enhancements to this program will hopefully include the ability to identify the LSA tasks that the government must perform. Users are strongly encouraged to submit their lessons learned in applying LSA tasks to improve Air Force LSA efforts and the content of this program.

I hope that you find this program helpful whether you be experienced or inexperienced in planning LSA tasks and subtasks for contractual documentation. A goal in developing this program was to provide an aid to logisticians to more efficiently (i.e., quicker) and more effectively (i.e., selecting the right tasks) tailor LSA requirements for contracts than using Mil-Std-1388-1A alone.

If you are completely unfamiliar with LSA and find some of the descriptions of the tasks within the program difficult to understand, I

highly encourage you to read the Air Force Logistic Support Analysis Primer (AFLCP 800-17) which provides a broader perspective of LSA and the tasks within Mil-Std-1388-1A.

Main Program Features.

There are four sections to the program: (1) a section that describes the different LSA tasks and subtasks with notes included from AFALC experience in managing LSA efforts, (2) the applicability matrix of LSA tasks from Mil-Std-1388-1A, (3) a task tailoring routine to uniquely tailor tasks for a contractual effort, and (4) the AFALC LSA lessons learned. I will briefly explain the purpose of each section within the program.

The first section which describes the different tasks is intended to eliminate the need to have to use the military standard to hunt for an explanation of the different LSA tasks and subtasks. The LSA DSS program allows one to quickly tree through the different task areas, tasks, and subtasks. In addition, as important notes are gathered from experienced logisticians in applying LSA to contractual efforts, they are included in this portion of the program.

The second section, the applicability matrix from Mil-Std-1388-1A, relates the applicability of tasks and subtasks to the different acquisition phases. Relying on the matrix alone to tailor tasks for a contractual effort is highly discouraged. The matrix is included in the program for logisticians with minimal experience in applying LSA to provide a general concept of when certain tasks are accomplished. Because many programs compress and combine acquisition phases and have

unique requirements, the user of this program is highly encouraged to use the third section of the program to tailor LSA requirements.

The third portion is a series of questions that will lead you through the different LSA subtasks. Questions will ask if certain tasks have been accomplished or need to be accomplished. To go through this portion of the program you should be familiar with LSA work that has been done so far for the acquisition effort. As you go through this portion, if you are not certain about the applicability of certain tasks or subtasks, you will be able to answer "unsure", and that particular task will be noted in the output report with "unsure." The output report will provide comments from the applicability matrix. If a subtask is selected as a required task the contractor must perform and it is not generally applicable to the specified acquisition phase, notes from the applicability matrix will be included in the output report highlighting that fact.

This is the first iteration of the LSA DSS program, but hopefully not the last! As more lessons are gathered, more information and decision rules can be added to the program to improve it. Your suggested improvements are highly encouraged.

The fourth portion of the program is the AFALC LSA lessons learned. All lessons current as of July 1988 are included in the program in the same format and categories as in the AFALC LSA Lessons Learned Bulletin. The user will be able to have any of the lessons learned case studies displayed on the screen.

The overall concept of the program was to provide information in sections one, two, and four of the program that logisticians would review prior to or after using section three to ensure the right tasks and

subtasks are selected for your contract documentations.

Equipment Requirements.

This program was developed using DBASE III Plus programming language. I made the assumption that the Zenith 248 computer was generally available within system program offices (SPO's) with a hard disk drive and at least one floppy disk drive. This manual is written, thus, for IBM XT or AT compatible microcomputers with at least 256K or more of random access memory (RAM) using the MS-DOS operating system.

DBASE III Plus operates with IBM PC compatible microcomputers and dual floppy computers without a hard disk drive as well. However, this manual and the structure of the LSA DSS program do not take this equipment into consideration.

Software and Storage Space Requirements.

MS-DOS Version 3.0 was used in developing this program; an MS-DOS operating system should probably be used to run it. The program has not been compiled as of yet. Therefore, to use the LSA DSS program you must have a copy of the dBASE III PLUS program. dBASE III PLUS, Version 1.0, was used to develop this program.

The dBASE III PLUS program requires approximately 645K bytes of disk storage space. The LSA DSS program requires approximately 600K bytes of disk storage space, which includes the AFALC lessons learned. Instructions within this manual assume the dBASE III PLUS program and LSA DSS program will be stored on the hard disk drive, and the AFALC lessons

learned files kept on a floppy disk drive when used.

II. INSTALLATION INSTRUCTIONS

Hard Disk Drive Installation.

Both the DBase III Plus program and the LSA DSS program must be stored on the hard disk drive. If DBase II Plus is already on your hard disk drive, please be sure to note the naming convention given in this section. If you use different directory names to store program files the LSA DSS file named MAIN.PRG must be changed so the SET PATH TO command at the beginning of the program identifies the directory names you wish to use.

I assume your operating system (MS-DOS files) are stored on your hard disk drive in providing the following instructions. To store DBase III Plus in a directory named DBASE, type the following commands after your computer has been turned on:

```
type MKDIR DBASE
<Return>
```

```
type CD DBASE
<Return>
```

to load each of the DBase disks onto the hard disk drive, insert them into your top floppy disk drive and
type COPY A:.*.* C:\DBASE
<Return>

after all the DBase files have been loaded (you only need the two systems disks to run the LSA DSS program), make a sub-directory to directory DBASE to store the LSA DSS program files

```
type MKDIR LSA
<Return>
```

copy the LSA DSS files into the subdirectory as you did for the DBase program files (you need not copy the lessons learned files onto the hard drive as the LSA DSS program

```
will look for these files on your A: floppy disk drive)
type COPY A:.* C:\DBASE\LSA
<Return>
```

MS-DOS Configuration.

Several files will be opened while you run the LSA DSS program. The MS-DOS CONFIG.SYS file in the root directory of your hard disk drive needs to accomodate this. I recommend that your CONFIG.SYS file include the following specification:

```
BUFFERS=25
FILES=25
```

If the CONFIG.SYS file is not changed to accomodate having many files opened simultaneously, you will receive a notice that too many files are opened while using the LSA DSS program and you will have to reboot your computer to leave the program.

III. OPERATING INSTRUCTIONS

Program Startup.

Once DBase III Plus and the LSA DSS program files have been stored on your hard disk drive, and your CONFIG.SYS file has been changed, if necessary, to accomodate the number of files opened while using this program, you are ready to use the LSA DSS program.

Step One. Start the DBase III Plus program and go to the dot prompt mode. This is done by first ensuring you are in the directory named DBASE. Type CD DBASE <Return> if you are not already in the DBASE directory to enter the DBASE directory. Type DBASE <Return> <Return> to start the program. You will see a menu display for the DBase program. To get to the dot prompt mode simply hit <Esc>.

Step Two. Start the LSA DSS program by typing at the dot prompt SET PATH TO C:\DBASE\LSA <Return> and then type DO MAIN <Return>. The remainder of the program is menu driven. Just select the portion of the program you want to use and answer as the program prompts you.

The CONFIRM option is activated in the program, so after answering a question the program waits for you to hit <Return> to confirm the answer you give the computer. You can change your answer prior to hitting <Return>. If you provide an answer that is outside the range of answers the program expects, it will wait for an answer that is within the range of possible answers. All answers to questions are numerical.

If you are prompted at the beginning of the LSA DSS program to overwrite an existing file, answer Yes. The LSA DSS program is simply overwriting a cloned database file that is used when the program is run.

Sub-Programs Within the LSA DSS Program.

Section I of this users manual provided a brief description of the four sub-programs within the LSA DSS program. In this section I will provide a little more explanation regarding the content of each of the four sub-programs.

LSA Task/Subtask Descriptions. This portion of the program gives a description of each of the tasks and subtasks that can be levied on a contractor. A majority of the information is excerpted or synopsized from the task description section of Mil-Std-1388-1A. Additional information is added from Appendix A. Important supplemental notes are added from interviews with LSA experts.

Applicability Matrix. This portion of the program contains information from Table III of Mil-Std-1388-1A, the Logistic Support Analysis Task Application and Documentation Matrix. Notes relating tasks to applicable data items is not included in this program, though they are in Table III of the military standard. Where LSA overlapped other contract requirements but was not the primary implementing requirement in the contract (such as FMECA), the primary implemented document is cited.

It is possible to get a printout or file copy of the applicable tasks for the different acquisition phases. As stated earlier, this applicability matrix portion of the program and the output product from it are intended to be used as supplemental information in using the unique tailoring portion of the program.

Unique Tailoring. This portion of the program requires some effort on the part of the user. You must have an idea of the LSA and engineering work that has been accomplished to date and what objectives

program management and the logistics team is trying to meet in the upcoming contract effort.

There are a total of 70 questions that must be answered to go through this portion of the program and tailor the 77 subtasks of Mil-Std-1388-1A. The program essentially walks the user through a very brief description of each task to ask if it must be accomplished. Notes that have been captured from Air Force experience in applying tasks are added if they aid in determining whether tasks or subtasks should be levied on a contractor.

CAUTION: IF YOU ELECT TO LEAVE THIS PORTION OF THE PROGRAM BEFORE COMPLETING IT, YOU WILL HAVE TO RESTART FROM THE BEGINNING. The program allows the user to abort to the main menu at any time while this unique tailoring portion of the program is used.

There is a workaround to having to lose answers to questions when you abort to the main menu. When you re-enter this portion of the LSA DSS program, you will be prompted to overwrite the database file OUTPUT.DBF. Normally you should answer yes, overwrite it. If you answer no, the program will be given conflicting commands and will ask if you want to abort, ignore, or cancel. If you answer to ignore, you will start the unique tailoring portion of the program with the recorded answers from last using this portion. To skip through questions, hit return in responding to questions (i.e., answer with the zero value) and the applicability of subtasks questions pertain to will be unchanged in the database. When OUTPUT.DBF is overwritten, all subtasks are coded as being not applicable, and tasks are coded as applicable so they appear as header information in the output report.

After all 70 questions are answered, the user will have the option

to see the results displayed on the screen, sent to a printer, and/or sent to an ASCII formatted file named LSADSS.TXT within the DBASE directory. You can read this file by typing TYPE LSADSS.TXT ! MORE after leaving the DBASE III Plus program, but remaining in the directory DBASE.

AFALC Lessons Learned. This portion of the program will display a list of the AFALC LSA lessons learned with the case study number, lesson topic, and a selection number that you will use to review a particular lesson learned of interest. The A: floppy disk drive must contain the lessons learned file disk. Lessons you wish to read will be displayed on the screen a page at a time. There is no print feature to this portion of the program. You have the option to review the list of lessons learned and particular lessons learned of interest as many times as you desire.

Quitting.

When you are through using the LSA DSS program, select answer five in the main menu to return to DBASE III Plus. Type QUIT <Return> to leave DBASE, and CD\ <Return> to return to the root directory of your computer.

IV. UPDATES

If you have any suggested improvements to this program, please send them to AFALC/ERL, Wright-Patterson AFB, OH 45433, or call AUTOVON 785-3754. If you have official lessons learned to submit to AFALC to help improve our acquisition programs, contact AFALC/LSL, Wright-Patterson AFB, OH 45433, or call AUTOVON 785-3161.

Appendix L

Acronyms

AFALC	Air Force Acquisition Logistics Center
AFIT	Air Force Institute of Technology
AFLC	Air Force Logistics Command
AFSC	Air Force Systems Command
ALC	Air Logistics Center
AMC	Army Material Command
ASD	Aeronautical Systems Division
ASCII	American Standard Code for Information Interchange
ATC	Air Training Command
CATSP	Computer Aided Tailoring Software Program
CDRL	Contract Data Requirements List
CGADS	Computer Generated Acquisition Documents System
DDN	Defense Data Network
DSS	Decision Support System
ESD	Electronics Systems Division
FMEA	Failure Modes, Effects and Criticality Analysis
FSD	Full-Scale Development
ILS	Integrated Logistics Support
LCC	Life Cycle Cost
LOGPARS	Logistics Planning and Requirements Simplification System
LSA	Logistic Support Analysis
LSAR	LSA Record
MCCR	Mission Critical Computer Resource
MRSA	Material Readiness Support Activity
RADC	Rome Air Development Center
RCM	Reliability Centered Maintenance
RFP	Request for Proposal
SOW	Statement of Work
SPO	System Program Office

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VITA

Captain Paul A. Dunbar was born on [REDACTED]
[REDACTED] He graduated from Watkins Glen High School in 1974 and attended State University College at Cortland, from which he received the degree of Bachelor of Arts in Economics in May 1978. He received a commission in the USAF through Officers Training School in October 1980. He was a project manager on the KC-135 Re-engining Program from October 1980 to September 1982 within Aeronautical Systems Division, Directorate for Airlift and Trainers. He was a project manager for the C-23A Aircraft Program from September 1982 to February 1984 within the same directorate. Captain Dunbar attended Flight Training School from March 1984 to August 1984 at Vance AFB, OK. He then was the Integrated Logistics Support Manager for the Modular Equipment Control (AN/TYQ-23) Program at Electronics Systems Division until entering the School of Systems and Logistics, Air Force Institute of Technology, in May 1987.

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<p>Thesis Advisor: Richard A. Andrews Assistant Professor Department of Systems Acquisition Management</p> <p>Approved for public release IAW AFR 190-1.</p> <p>WILLIAM A. MAUER <i>Richard A. Andrews</i> 17 Oct 88 Associate Dean School of Systems and Logistics Air Force Institute of Technology (AU) Wright-Patterson AFB OH 45433</p>			
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22a. NAME OF RESPONSIBLE INDIVIDUAL Richard A. Andrews, Assistant Professor		22b. TELEPHONE (Include Area Code) (513) 255-3355	22c. OFFICE SYMBOL AFIT/LSY

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This thesis involved the development of a microcomputer program to help tailor Logistic Support Analysis (LSA), Mil-Std-1388-1A, requirements for contractual efforts. It is referred to as the LSA Decision Support System (DSS) Program. This program is intended to aid working level logisticians in developing good "first-cut" LSA requirements.

There are four main features in the program: (1) Mil-Std-1388-1A task and subtask descriptions with added notes from LSA experts, (2) a replication of the applicability matrix in Mil-Std-1388-1A, (3) a unique tailoring portion with notes from LSA experts, and (4) the AFALC LSA Lessons Learned as of July 1988. The programming language used is dBASE III PLUS; it is required to run the LSA DSS Program. The program was structured to be easily updated and expanded.

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